



**MEGAPESCA Lda**

**PROJECT FISH / 2003 / 02**

**FRAMEWORK CONTRACT FOR PERFORMING EVALUATIONS, IMPACT ANALYSES AND  
MONITORING SERVICES IN THE CONTEXT OF FISHERIES AGREEMENTS CONCLUDED  
BETWEEN THE COMMUNITY AND NON-MEMBER COASTAL STATES**

**SPECIFIC AGREEMENT (32) : KIRIBATI**

***Ex-post* evaluation of the current Protocol to the Fisheries Agreement between the  
European Community and the Republic of Kiribati, and analysis of the impact of the  
future Protocol on sustainability, including *ex-ante* evaluation**

**FINAL REPORT**

**AUGUST 2006**

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## GLOSSARY OF TERMS USED

**Ex-ante evaluation:** a forward analysis of the impacts of a proposed Fisheries Partnership Agreement (FPA), with an assessment of the expected net benefits to stakeholders in terms of performance against a set of agreed indicators. It will also identify conditions, external risks and assumptions which apply to the evaluation, and identify the technical and institutional basis for the monitoring indicators, all of which may affect the subsequent nature, substance and content of the subsequent FA. Ex-ante in the context of the FPAs is two parts – first before protocol signed and contains more on impact assessment (see below) and the second, once protocol signed focusing more on traditional evaluation tools such as relevance, efficiency, value for money, additionality etc

**Ex-post evaluation:** provides an historical assessment of the impacts of an FA after its termination, including as far as possible an indication of residual impacts not yet realised. It also assesses the extent to which specific and general objectives of the CFP have been achieved by the FA, thus providing feed-back for development of wider policy. Since many FAs are replaced by new agreements, there can also be a legitimate interest in formative issues at the ex-post stage providing feed-back for the design of future agreements.

**Impact assessment:** assessment of the positive and negative changes produced by an intervention, directly or indirectly, intended or unintended. An Impact Analysis (IA) contains more on economic and social issues than an ex-Ante which is more strongly focused on cost effectiveness. IA is part of both ex-ante and ex-post. But when part of an ex-ante it considers the impacts of different possibilities i.e. scenarios. IA is not a tool for deciding whether a protocol should be signed, but is a basis for negotiation and part of the overall process of agreeing access with partner countries, and assessing the basis on which such access is appropriate given the possible impacts. Social, environmental and political cost/benefits may need to be more qualitative. The study should attempting to balance the financial, social etc costs/benefits and make a decision, but rather just needs to present the impacts.

<p>This report has been prepared with the financial support of the European Commission.</p> <p>The views expressed in this study are those of the authors and do not necessarily reflect the views of the European Commission or of its services. This report does not seek to establish the Commission's future policy in this area. It merely acts as a guideline document for policy makers.</p> <p>The content of this report may not be reproduced, or even part thereof, without explicit reference to the source.</p>		
<p>Oceanic Développement, Poseidon Aquatic Resource Management Ltd and MegaPesca Lda (2004). 'Framework Contract for Performing Evaluations, Impact Analyses and Monitoring Services in the Context of Fisheries Partnership Agreements Concluded Between the Community and Non-Member Coastal States.</p> <p>INTERNAL DOCUMENT: NOT FOR PUBLICATION</p> <p>Contact for authors : OCEANIC DÉVELOPPEMENT</p> <p>Z.I. du Moros, 29900 Concarneau, France</p> <p>Tel : +33 2 98 50 89 99</p> <p>Fax : +33 2 98 50 78 98</p> <p>Email : <a href="mailto:info@oceanic-dev.com">info@oceanic-dev.com</a></p> <p>URL : <a href="http://www.oceanic-dev.com">http://www.oceanic-dev.com</a></p>		
Version: Final Report	Report ref: FPA 32/KIR/02/FR/B	Date issued: 3 August 2006

## ACKNOWLEDGEMENTS

The consultants would like to acknowledge the interest and support of the staff of the I-Kiribati<sup>1</sup> Ministry of Fisheries and Marine Resource Development, especially the Permanent Secretary David Yeeting, Maruia Kamatie, Chief Fisheries Officer and Raikaon Tumoa, Senior Licensing Officer, who gave freely of their time. Special thanks are due to Norma Yeeting, the National Authorising Officer who facilitated the consultant's work, and the range of officers in the public and private sector who met with the consultant. A full list of contacts is shown in Appendix A.

The consultants would specially like to express thanks for all the support, assistance and hospitality of the Forum Fisheries Agency in Honiara, Solomon Islands, especially to Len Rodwell, Chris Reid and Kabo Ruaia (Permanent Secretary at the I-Kiribati Ministry of Fisheries and Marine Resource Development during the negotiation of the Protocol between the European Union and Kiribati). They also appreciate the assistance of Tim Lawson from SPC in providing detailed catch data for the Kiribati EEZs.

The consultants would also like to record their gratitude for support given by the EU Delegation in Suva, Fiji Islands.

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<sup>1</sup> I-Kiribati is the form used to describe a person from Kiribati or belonging to Kiribati (cf. Europe – European).

## Acronyms Used

ACIAR	Australian Centre for International Research
ACP	African, Caribbean and Pacific
ADB	Asian Development Bank
AIDCP	Agreement on the International Dolphin Conservation Program
ASCL	Atoll Seaweed Company Limited
AUSAID	Australian Development Aid
CBD	Convention on Biological Diversity
CI	Conservation International
COFISH	Pacific Regional Coastal Fisheries Development Programme
CPPL	Central Pacific Producers Limited
CPUE	Catch per Unit Effort
DEVFISH	Development of Tuna Fisheries in Pacific ACP Countries
DWFN	Distant Water Fishing Nations
EDF	European Development Fund
EEZ	Exclusive Economic Zone
ENSO	El Nino Southern Oscillation
EPO	East Pacific Ocean
EU	European Union
FAD	Fish Aggregating Device
FAO	Food and Agricultural Organisation
FFA	Forum Fisheries Agency
FIC	Foreign Investment Commission
FL	Fork Length
FLEU	Fishing License and Enforcement Unit
FLLEA	Fisheries Law and Licensing Enforcement Authority
FSM	Federated States of Micronesia
GDP	Gross Domestic Product
GNP	Gross National Product
GRT	Gross Registered Tons
HC	High Commission
HDI	Human Development Index
HP	Horse Power
ICSID	International Centre for the Settlement of Investment Dispute
ILO	International Labour Office
IMF	International Monetary Fund
IWC	International Whaling Commission
LOSC	Law of the Sea Conference
LSD	Lands Survey Division
MELAD	Ministry of Environment, Land and Agricultural Dev.
MFMRD	Ministry of Fisheries and Natural Resource Development
MICT	Ministry of Information, Communications & Transport
MIGA	Multilateral Investment Guarantee Agency
MMA	Micronesian Maritime Authority
MPA	Marine Protected Area
MSE	Management Strategy Evaluations
NSA	Non State Actors
NZAID	New Zealand Development Agency
OFP	Oceanic Fisheries Programme
PACREIP	Pacific Regional Economic Integration Project

PICs	Pacific Island Countries
PIFS	Pacific Islands Forum Secretariat
PIPA	Phoenix Island Protection Area
PNA	Parties to the Nauru Agreement
RAO	Regional Authorising Officer
RERF	Reserve Equalization Reserve Fund
SECN	South Equatorial Current
SOE	State Owned Enterprise
SOPAC	South Pacific Applied Geoscience Commission
SPC	South Pacific Commission
SPR Tramp	South Pacific Regional Tuna and Monitoring Programme
SPREP	South Pacific Regional Environment Programme
SPTT	South Pacific Tuna Treaty
TAE	Total Allowable Effort
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VDS	Vessel Day Scheme
WCPFC	Western and Central Pacific Fisheries Commission
WCPO	West Central Pacific Ocean
WHO	World Health Organisation

**Figure 1: The Location of Kiribati in the Western Central Pacific****Table 1: The Euro / Australian Dollar Exchange Rate**

	A\$ per €	US\$ per €
2000	1.60	0.92
2001	1.74	0.90
2002	1.74	0.95
2003	1.74	1.13
2004	1.69	1.24
2005	1.63	1.24

Source: Reserve Bank of Australia, Federal Reserve

## **EXECUTIVE SUMMARY**

### **Introduction**

This report describes the findings and recommendations of a study to evaluate the Fisheries Agreement and a Protocol between the European Union (EU) and the Republic of Kiribati, and a forward analysis of the impacts of future protocol, including ex-ante evaluation of potential renewal scenarios.

The study was commissioned by the DG Fisheries and Maritime Affairs of the European Commission under a framework contract “for performing evaluations, impact analyses and monitoring services in the context of fisheries partnership agreements concluded between the Community and non-member coastal states” operated by a consortium comprising Oceanic Développement (France), Poseidon Aquatic Resource Management (UK) and MegaPesca Lda (Portugal).

A team comprising Team Leader / Economist, a Fisheries Resources specialist and Fisheries Law Specialist undertook the study. The team leader visited Kiribati in June, 2006, and also travelled to the Solomon Islands to discuss various issues with staff of the Forum Fisheries Agency (FFA), met with representatives of the EC in Brussels, briefed the EC Delegation in Fiji and contacted Spanish fishery sector stakeholders from Spain.

### **Section A: Background to the Assessment**

The first section of the report reviews various aspects of the Kiribati, providing a background against which to assess the role and importance of the fisheries agreement and the context in which it operates. An output of this section is to identify any potential problems in implementing the agreement, from point of view of the EC, the vessel owners and the partner government.

Kiribati is a remote, widely scattered Pacific nation, consisting of three dispersed Island group (the Gilberts, the Line Islands and the Phoenix Islands), which together have a total land area of 726 sq km. The capital on South Tarawa in the Gilberts is over 2,000 km. to the west of Kiritimati in the Phoenix. While the population is just 94,000, there is an annual growth rate of 2.4 %, and as much as 45% of the total population live on a single crowded island. The potential for social problems is emphasised when one considers that half the population is under 19 years of age, and a large number are uneducated and without skills.

Since independence from the UK in 1979, the country has been politically stable. The next elections for the 42 member unicameral parliament are due in 2007. It is Parliament which nominates four candidates for President with final selection undertaken by the electorate.

While the legal system of Kiribati derives from the Constitution of 1979 and Acts of Parliament, a large part of the base stems from colonial day and English common law.

The economic problems of Kiribati relate to its small size, remoteness and geographical fragmentation, a harsh natural environment and limited exploitable resources. Since the end of phosphate revenue in 1979, economic performance as been poor and this is reflected by the low ranking of per capita Gross Domestic Product (2004: €605). Due, however, to the importance of transfer payments from migrant workers, especially seamen, Gross National product is higher (2004 - €1,089). As may be expected of an island nation, marine resources are the mainstay of the economy and this importance is explored fully in the second section of the report.

The I-Kiribati government adopts a multi-sectoral approach to national planning. A National Development Strategy for the period 2004-2007 identifies six axes (economic growth; fair distribution; public sector performance, equipping people to manage change; conservation of physical assets and sustainable use of financial reserves) together with related issues, strategies and key activities, together with identification of lead and supporting Ministries. Individual ministries prepare an annual up-date examining progress made and the approach for the following year. In 2005 the Government established the Strategic and Risk Management Unit in the Office of the President to address core development issues such as Population and the Climate Change Policy. The government has adopted a Policy statement on Adaptation to Climate Change and aims to mainstream adaptation planning throughout its development process.

Given weak economic performance, Kiribati is heavily reliant upon donor funds. In 2005, these totalled A\$85.8 million (€52 million). Most important are Taiwan (21.4%), ADB (17.7%), Australia (14.3%), Japan (13.0%) and the EU (10.82%). Australian aid includes assistance in the surveillance of the large EEZ.

The EC cooperates widely with the country, in terms of direct aid and regional projects. Outer island social development was as the strategic sector for European Union cooperation in the period 2002 to 2007, with a total financial allocation for 9 EDF of € 11 million. A continuing 8 th EDF project, which will end in November 2007, is Support to the Seaweed Industry.

The EC regional allocation amounts to € 29m and includes three focal sectors: “Economic Integration and Trade” (€ 9m); “Human Resources Development” (€8m); and “Fisheries” (€ 5m). Fishery projects are the Pacific Regional Oceanic and Coastal Fisheries Programme, Pacific Regional Coastal Fisheries Development Programme (COFISH), and Development of Tuna Fisheries in the Pacific ACP Countries (DEVFISH).

In social terms, Kiribati is often described as a society in transition moving from a subsistence economy supported by extended families to one where money plays an increasingly important role and where families are separated by migration, urbanisation and other external factors. Out of 14 countries in the Pacific, Kiribati ranks 11th on the UNDP’s Human Development Index and 129th overall. I-Kiribati are vulnerable to a wide range of interconnected resource and environmental issues affecting sustainable development. These include climate variability and change, sea-level change, population growth, environmental degradation and resource management.

The Government of Kiribati aims to improve on the growth performance of the country by encouraging private sector investment, diversification of the economy and instituting appropriate policies and measures. To date there has been limited success in attracting foreign investment. This is due to the isolated location of Kiribati, the high cost of doing business, and difficulties in communication and transport. Other issues are taxation and the level of bureaucracy.

Total exports in 2003 were A\$4.5 million (€ 2.6 million), declining 71 % from 1999. In contrast, imports of A\$79.5 million (€45.7 million) in 2003 were 125 % of the 1999 total.

## **Section B: Analysis of the Fishing Sector and Industry**

The second section of the report examines the background to the fishing industry. Due to its wide geographical spread with three separate zones, the combined is 3.5 million km<sup>2</sup>. While artisanal landings from reef and lagoon fisheries are unknown (estimated to be between 8,000 t. and 10,000 t.), the importance of the ocean to the livelihoods of the I-Kiribati is emphasised by the fact that in the Gilbert group about 75% of all the households are engaged in some form of artisanal fishing.. Fish is the main form of protein intake in Kiribati at almost 100 kg per year.

The potential for development of inshore resources is, however, limited. In contrast, Kiribati’s oceanic resources are much wider ranging, mainly consisting of tunas such as skipjack and yellowfin. However, Kiribati has not developed national capacity to harvest these resources, with only a single purse seiner in the national fleet.

While MFMRD were unwilling to divulge details, 283 foreign fishing vessels were licensed to fish in Kiribati waters in 2005, down by 28 per cent from 2002. Important flag nations are USA (19,299 t), Japan, Korea and Taiwan. Spain caught 625 t in 2004 and a little less in 2005.

The main species caught by purse seiners in the Kiribati EEZ is skipjack (79%) with fishing activities mainly take place in the southern portion of the Gilbert Islands (i.e. the west of the I-Kiribati EEZ). In contrast, Spanish vessels fish in the east of the EEZ as an extension to efforts in the East Pacific Ocean.

Long liners fleets from countries such as Korea (10,000 t. to 11,000 t.), Taiwan, China, Japan and Vanuatu are licensed to fish the Kiribati EEZ. Bigeye usually makes up half the catch, with the remainder mainly consisting of yellow. Japan is the second largest long line flag operating in I-Kiribati waters followed by Taiwan. No European long line vessels have reported catches. The Spanish surface long line fleet did not carry out any fishing activity in the western and central zones of

the Pacific Ocean prior to 2004, but now target swordfish in the region adjacent to Melanesia, New Zealand and Australia.

A recent stock assessment for yellowfin stock considered that over fishing of yellowfin is now likely to be occurring in the WCPO, although the stock is not yet in an over fished state. Bigeye tuna catches are approximately 5% less than the average 2001–2003 levels. In contrast, it is considered that skipjack is currently exploited at a modest level relative to its biological potential.

The tuna long line fishery in the region, and to a lesser extent, the purse seine fishery, catch considerable quantities of sharks but in Kiribati little is known and this highlights the need for an effective observer programme, which includes the analysis of data collected, including that on sharks.

While some concern has been expressed that in the Pacific Islands the tuna fisheries may negatively affect turtles, marine mammals, and seabirds, studies suggested that the interaction between these groups of animals and the tuna fisheries is not as large as was originally thought.

Kiribati recently announced the establishment of the Phoenix Islands Protected Area which is one of the largest marine protected area in the Pacific Islands at 184,700 km<sup>2</sup>. In addition, there are 11 marine protected areas in Kiribati, totalling 590 km<sup>2</sup> in area.

Management of the highly migratory stocks in the Western Pacific region has historically been coordinated by the Forum Fisheries Agency (FFA). The FFA, which mainly has a policy and management harmonisation role, receives scientific advice from the SPC. More recently, FFA has been instrumental in forming the Western and Central Pacific Fisheries Commission (WCPFC) in 2004 which will provide a regulatory structure that has been lacking to date.

At its second session in December 2005, WCPFC decided not to allow an increase in the total level of fishing effort for bigeye and yellowfin, and to ask members to ensure that purse seine effort levels do not exceed either 2004 levels. In addition a new management regime was announced for purse seiner fisheries. From December, 2007, a Vessel Day Scheme (VDS) will be implemented to limit days fished to a level no greater than 2004 levels.

VDS replaces the current restriction on the number of purse seiners. It's aim is to enhance the economic and biological sustainability of the western and central Pacific purse seine fishery by controlling the level of fishing effort by purse seine vessels within limits consistent with resource sustainability; and increasing economic benefits to resource-owning states and economic returns to participating vessel owners. Although to be confirmed, it is reported that Kiribati has 4,000 vessel days allocated.

On-shore development potential is limited by the paucity of infrastructure. The Kiribati Port Authority acknowledges that the infrastructure is inadequate and the plant and machines do not meet operational demand. Accordingly, while European purse seiners would be able to trans-ship in Kiribati, they are unable to land directly.

There is limited private sector ownership of fishery enterprises in Kiribati. Both Central Pacific Producers Limited (CPPL) and Atoll Seaweed Company Limited (ASCL) are state owned companies. CPPL's main activity is to collect fish from the outer islands in the Gilbert Group for processing and local sale. Also it exports from Kiritimati to Hawaii. While it has good potential, the company has limited processing capacity.

ASCL was developed with the assistance the EC. Its aim is to promote growth of seaweed in the Islands, for export sale in its raw form. The project has achieved limited success due to low production levels, the remoteness of the shipment port from the main producing island, the lack of feasibility in producing added value products and losses occasioned by the appreciation of the Australian dollar against the U.S. currency.

KAO is a joint venture fishing company with Kiribati Government having 49% share and Otoshiro of Japan having the remaining 51%.

Apart from seaweed, there have been a large number of trials of aquaculture products, with the main one concerning the production of milk fish in 80 has. of ponds on South Tarawa. Other projects include pearl oysters, giant clams, beche-de-mer, sponges and trochus.

There are no procedures for health and sanitary, and no national inspection service. CPPL considers that a small project may be possible through the regional DEVFISH, but to-date, that has not been discussed. Exports from Kiribati do need a permit, while a Ministry official is stationed at the airport in South Tarawa to inspect personal exports of fish. A limitation on developing inspection systems commensurate with the requirements of the EC is the high cost when export potential is limited.

The Ministry of Fisheries and Marine Resources (MFMRD) is responsible for the definition of fisheries policy in Kiribati. The Fisheries Division (FD), under the auspices of the MFMRD, is specifically responsible for the exploration, exploitation, development, utilization, proper management and conservation of fisheries and marine resources encompassed within the EEZ. The long-term goal of the division is to maximize returns from these resources and ensures that resources are being utilized on a sustainable basis to ensure the attainment and continued satisfaction of human needs for the present and future generations of Kiribati.

The absence of a formal domestic fishery management plan and supporting legislation is superseded by the legislation that gives the Minister, Chief Fishery Officer/Director of Fisheries, and Licensing Officer total authority and total for the current non-transparent and ad hoc management of the fishery that is focused on revenues.

The Fisheries Ordinance 1978 establishes a licensing system applicable to both local and foreign fishing vessels. No vessel can be used for fishing in the Kiribati fishing zone unless authorized to do so by the competent authority. Permits for foreign fishing vessels are issued by the Chief Fisheries Officer, with the approval of the Minister, upon payment of such fees and royalties as may be determined. The main duties of the Fisheries Licensing and Enforcement Unit (FLEU) are to generate revenue from Kiribati marine resources through fishing access, to generate employment for young people on fishing vessels, manage the marine resources on a sustainable basis, and to carry out enforcement duties to protect the country's marine resources.

A Fisheries Training Centre (FTC), which was established in 1989 with Japanese aid support. The Centre currently trains up to 72 crew a year to the standards of discipline and safety required by Japanese fishing vessels. The graduates of the school are then placed on Japanese long liners.

The approach to fishery policy is through a multi-sector development strategy, as highlighted above. The main fisheries policies are (i) maximising sustainable economic benefits from the tuna resource, (ii) conserving stocks of vulnerable species in face of rising demand for food and cash income, (iii) managing the transition in mariculture from government research to commercial production and export, (iv) encouraging private commercial investment in marine and mineral resources and tourism, (v) strengthening of the agricultural and fisheries extension services, (vi) identifying the most promising income-earning opportunities in outer islands and demonstrate commercial feasibility and (vii) identify participatory development strategies to manage increasing risk and design cost effective adaptation.

The last government presented a "Kiribati Tuna Development and Management Plan" to identify the issues and stumbling blocks to the development of an international tuna industry in Kiribati. The new government has not taken up the plan as it does not agree with the recommendation to establish a National Fish Licensing Agency. However the analysis contained in this report highlights the I-Kiribati strategy to developing their interest in tuna fisheries.

In 2005, fishery licenses represented 46 % of total revenue and 91 % of non tax revenue. For 2006, total government revenue is expected to increase by 10 % to A\$68 million (€42 million), of which fishery licenses are expected to provide A\$31 million (€19.1 million).

In 2006, MFMRD has a 2.3 % share of the A\$83 million (€50.9 million) appropriated and statutory budget for 2006. ). License fees enter this account. In addition, MFMRD has a 0.4 % share of the recurrent and development budget of A\$50.9 million (€31.2 million). This budget, financed by donors, provides about 40 % of total government expenditure. In 2005, 19 fishery projects received development funding to a value of A\$6.7 million (€ 4.11 million).

As would be expected given its importance to the country, MFMRD takes its role seriously as the negotiator of the fees and has the objective of achieving an annual increase in the proportion of fees as part of the commercial value of the landings. Fees can either be direct payments or part of a package offering development incentives. MFMRD preferences for licensing partners will be on the

basis of (i) the overall compensation to be received by Kiribati (including development aid); (ii) the assistance provided in developing on-shore fishing activity in the country (especially if Kiribati is the preferred location for new development in the Pacific area); and (iii) the ability to conform with management regulations and assure the sustainability of the resource. Licensing policy is revenue driven

Monitoring, control and surveillance of fishing activities is difficult, and despite aid from the Australian Government and FFA remains weak. Kiribati owns one Australian-built Forum Class small patrol boat, which takes place in exercises coordinated by the Australian government and other monitoring activities. Current observer coverage on purse seiners is low at less than 5%, while for long liners it is 1 %.

The main stakeholders interested in the agreement with the EC is the I-Kiribati government and population. There is a dependence of the national economy on income from the sale of fishing licenses, the need to ensure the sustainability of fish resources in order to maintain food security and the large number of I-Kiribati working on foreign fishing vessels which, along with work in merchant shipping, is an important source of national and family income. Regional organisations are important in developing and implementing fisheries policy in the Pacific. The most important are the Forum Fisheries Agency, Secretariat of the Pacific Community and Western and Central Pacific Fisheries Commission.

### **Section C: Evaluation**

The third part of the report presents a SWOT analysis, and an ex-post evaluation of the current FA.

In July, 2003, the EU and the Republic of Kiribati signed a bilateral Fisheries Agreement that provides tuna fishing possibilities for EU vessels fishing in the waters of Kiribati. The first protocol under this new agreement entered into force on 16 September 2003.

The SWOT analysis highlights the main issues in the Kiribati fishery sector. The main factor that affects Kiribati is its location with associated poor communications and high cost of doing business, with an infrastructure that remains inadequate for the needs of business development. Lack of water, expensive energy and a small fragmented domestic market are other issues of note. While the country enjoys the support of Australia and FFA in the management of its tuna resources, there is little “in-house” knowledge and the ability to research, document and manage non-tuna fisheries is extremely limited. While public institutions benefit to the extent that there is little competition from the private sector for quality individuals, for the quality of its output the MFMRD is highly dependent on a limited number of individuals. While there are a range of aquaculture options, to date none have been proven to be commercially viable. The private sector is poorly developed and there is a lack of capital to establish major new business sectors. Attraction of major foreign direct investment has been limited to two companies.

The main points of the protocol are: (i) a duration of 3 years; (ii) overall financial compensation of € 546,000 for the first year and € 416,000 for the two subsequent years; with €100,000 allocated for targeted actions; (iii) a vessel owner share at € 35 per t. but with advanced non-refundable advanced payments covering 600 t. for purse seiners and 120 t. for long liners; (iv) the reference tonnage in Year 1 was 8,400 t., reducing to 6,400 t. in the subsequent two years with possibilities for increase according to the number of purse seiners licensed; and (v) in the first year the Protocol provides for fishing opportunities for 6 tuna seiners and 12 surface long liners while from the second year fishing possibilities were levelled at a minimum of 4 purse-seine vessels and 12 long-liners. However, the number of purse-seine vessels could be increased up to 11 vessels.

Over the three years of the agreement, purse seine licence uptake has varied from 50-75% and long line from 17-42% (see below).

Period	Purse Seine		Long Line	
	Available	Issued	Available	Issued
2003 – 2004	6	3 (50%)	12	2 (17%)
2004 – 2005	4	3 (75%)	12	5 <sup>2</sup> (42%)
2005 – 2006	4	2 (50%)	12	3 (25%)

In the initial two years of the protocol, catch was substantially below the reference tonnage with 624 t. (7.4%) in the first year and 607 t. (9.5%) in the second. The main species caught is skipjack

(83.5%). In the last year, Spanish purse seiners have not reported entry to and exit from the I-Kiribati EEZ. No landings or trans-shipments have been made into I-Kiribati ports, contravening the fisheries agreement. No observers have been requested to be placed on board EU vessels and no I-Kiribati seamen were contracted by EU vessels, nor is there evidence of *in lieu* payments for the seamen. As no joint committee has been established, the parties cannot discuss such issues on a regular basis.

From the I-Kiribati viewpoint, one of the main problems has been lack of compliance with the agreed procedures for notifying proposed plans for financing under targeted measures and reporting actual expenditure. Discussion with the fisheries department indicated uncertainty about the correct procedures which are not consistent with their other procedures.

In the first two years of the protocol the I-Kiribati government received an average of €481,000 in financial contribution, €83,500 in license fees and €8,500 for registration fees and contributions to the Observer Fund, equivalent to a total of €573,000.

Targeted actions cover costs associated with attendance at regional and international meetings, membership dues for regional and international organisations and an element for institutional strengthening. To date, payment has been made of the €100,000 available for the first year, but the remaining two payments are in abeyance awaiting the presentation of the required documentation. Actual spend in the first two years approximates to allowances defined in the FA. In the third year, planned expenditure is more focussed on individual small development projects.

Financial analysis indicates that the estimated catch value in the first two years of the FA averaged €334,000, providing an annual average for direct value added of €182,770. This was almost equally divided between the Community and the partner state, with value added attributable to Kiribati being limited to the licence fees paid by vessels plus related costs (registration fee and contribution to the Observer Fund). There are no other direct revenues for Kiribati associated with the FA (for example crew wages) and no indirect revenues (processing industry, vessel repairs and servicing, etc)

In sum, it can be concluded that due to the low level of catch, the FA has had limited impact. The benefits to Kiribati have been limited to increased revenue and new competition to established fishing interests to strengthen its bargaining position. Kiribati has, not benefited from assistance to on-shore development to which it aspired.

For the vessels owners, the beneficiaries have been individual purse seiners which can pursue tuna into the Kiribati fishing zone. However, in the future there are the prospects for substantially greater benefits to the purse seine fleet, especially if the real value of the tuna catch increases and in the context of FPAs with other Pacific island Nations (Solomon Islands and FSM).

For the EC the investment to date has not been efficient in terms of the return generated; however the FA can be regarded as an investment for the future, providing another element in the global strategy of maintaining fishing opportunities to the EU fleet.

### Conclusions and Recommendations

The report concludes that no party has achieved the results expected from the first protocol. The FA has been, however, effective in providing new fishing opportunities in the WCPO, which is especially important in the context of arrangements with other countries and the change to a VDS for management of purse seiner effort. The FA has not been effective in enhancing supplies of fish to Kiribati, nor in stimulating the development of I-Kiribati on-shore fishing activity.. The Agreement can be viewed, however, as a coherent measure for establishing mutually beneficial fishing activities within the Kiribati EEZ. The Agreement is relevant and coherent with Community policies in relation to fisheries, and development, in both national and regional projects. The Agreement has contributed

<sup>2</sup> This number is provided by the EC; I-Kiribati reported 8 to the consultant.

to responsible fishing by ensuring that effort by EU vessels is in line with regional fishery management policy and related conservation measures. The relatively low catches, in terms of tuna and large pelagic resources, means that the Agreement has negligible impacts on stocks.

It is recommended that a Fisheries Partnership Agreement is pursued that provides similar fishing opportunities to those at present but caters for a possible increased EU interest in the region resulting from the signing of agreements with FSM and the Solomon Islands.

## INTRODUCTION

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This report describes the findings of a study to evaluate the Fisheries Agreement (FA) and a Protocol between the European Union (EU) and the Republic of Kiribati. Findings from this study will be used to provide background information for discussions leading to negotiations for a Fisheries Partnership Agreement (FPA) scheduled for July, 2006. This FPA should be viewed in the context of other FPAs in the region – to date the Solomon Islands and FSM.

The study was commissioned by the Directorate General of Fisheries of the European Commission under a framework contract “for performing evaluations, impact analyses and monitoring services in the context of fisheries partnership agreements concluded between the Community and non-member coastal states”, operated by the consortium comprising Oceanic Développement (France), Poseidon Aquatic Resource Management (UK) and MegaPesca Lda (Portugal).

This Evaluation study was undertaken by a team comprising Team Leader/Fisheries Economist, Fisheries Resources Specialist and Fisheries Law Specialist. In preparation for an FPA, and in order to fully evaluate the significance of the Agreement for the Community and Kiribati, Members of the Evaluation Team undertook meetings with Commission staff. Telephone and e-mail contact was initiated with EU fishery sector stakeholders in Spain. The team leader visited Kiribati in June 2006, and held detailed discussions with, among others, staff of the Ministry of Fisheries, Ministry of Environment, Ministry of Commerce and the Ministry of Economy and Finance. He visited also the Forum Fisheries Agency (FFA) in the Solomon Islands.

The framework for the evaluation consists of the revised model template designed by the Commission and the Consortium following dialogue in December 2004. This is to a large extent influenced by Council Decision of 19 July 2004 on Fisheries Partnership Agreements (COM(2002) 637 final).

The current study presents an ex-post evaluation and impact assessment of the 1st protocol, with a view to assessing the conditions regarding the implementation of the Protocol, its economic, political, social, and environmental impacts and the possibilities for a future Protocol.

## **SECTION A: BACKGROUND TO THE ASSESSMENT**

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### **A.1 GENERAL**

#### **A.1.1 Location & Geography**

Kiribati is a remote, widely scattered Pacific nation that straddles the equator (Figure 2). The nation has 33 coral atolls, 21 of which are inhabited and includes three distinct groups of islands. The Gilbert Islands or Tuarua Group is a chain of 11 atolls and five other islands which have no lagoon but are of similar origin. Often considered alongside this chain is the isolated island of Banaba, a raised atoll reaching a height of some 81 meters similar to Nauru, and the only “high” island in the country. The Phoenix Islands include three atolls and five other islands with fringing reefs. There are also at least two other submerged reef structures (Winslow and Carondelet) which have no associated islands. The Line Islands in the east fall into a northern and southern group. The northern group includes the island of Teraina and the atolls of Tabuaeran and Kiritimati. The southern Line Islands are mostly uninhabited and include the atoll of Millennium Island (formerly Caroline Island) and three other islands with fringing reefs as well as at least one other submerged reef with no associated island.

The total land area is only 726 sq. km., of which over half (388 sq km) is on Kiritimati (Christmas Island). The related exclusive economic zone (EEZ) is equal in size to the continental United States

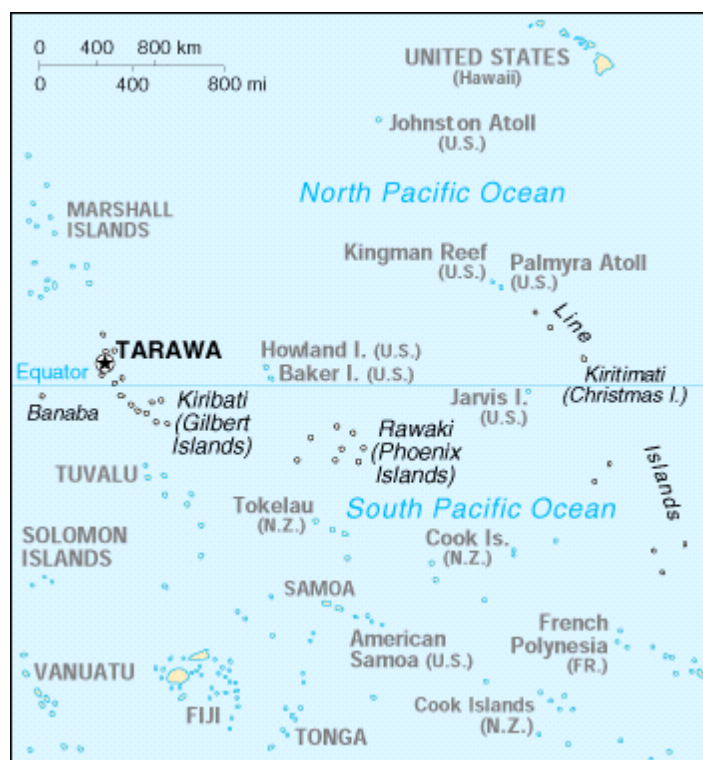
The capital on South Tarawa is over 2,000 km. to the west of Kiritimati.

The islands are very low-lying with few places being more than two meters above sea level. This makes them particularly vulnerable to rises in the sea level and also to pollution, unsustainable depletion of the underground water resources and coastal erosion brought about by both man-made and external factors.

The predominant climatic influence comes from the southeast trade winds which create a pronounced windward side to the reefs. The western islands are generally wetter, while the Line Islands lie in the dry equatorial zone. Rainfall is also significantly higher in all areas during El Niño Southern Oscillation (ENSO) events. Although tidal ranges tend to be low (less than 2 meters at spring tides) there is variation in sea level through the year (10-20 cm. variation in mean monthly levels) which can increase by up to 40 cm. during El Niño years.

The atolls comprise a typical diversity of habitats, including channels, lagoon reefs and shallow reef flats as well as reef slope environments. There is a clear difference between windward and leeward sides, with the windward (eastern) sides typically having a continuous reef margin, narrow reef flat and well developed islands. The leeward reefs are typically much wider, but in some places show a more gradual slope with a less developed reef flat, often submerged at low tide. Spur and groove formations are on all sides, but are usually best developed on lee shores.

In 1995 Kiribati unilaterally moved the International Date Line to include its easternmost islands, making it the same day throughout the country.

**Figure 2: Kiribati**

### A.1.2 Population

At the last census in November 2000, Kiribati had a population of 84,494, and it is estimated that the current number exceeds 94,000. With an annual population growth rate of 2.3 per cent, the population of Kiribati is expected to double over the next 20 years, exacerbating already serious environmental, urban management and health problems.

The population is almost entirely concentrated in the Gilbert Islands. The combination of high growth and lack of employment on the outer islands is causing the population to drift to Tarawa, the capital and main seat of government. About 43.5 per cent of the population live on South Tarawa and the population density (2,400 people per square km) is high, especially on the islet of Betio. The Phoenix Islands are largely uninhabited, in the main because freshwater is not always available. Just over 3,000 people live on Kiritimati.

Half the population of Kiribati is under the age of 19, with another 22% being between 20-34. A major part of the young population has no skills or employment.

The people are primarily Micronesians, with Asian and European minority populations, and speak a common local language. English is the official government language.

### A.1.3 Currency

The currency of Kiribati is the Australian dollar. The annual exchange rate against the Euro is shown above (Table 1).

## **A.2 THE POLITICAL SITUATION**

### **A.2.1 Recent Political History**

The Gilbert and Ellice Islands became a British protectorate in 1892. Banaba (Ocean Island) was annexed in 1900, and the protectorate was made a British colony in 1916. The Line and Phoenix Islands were incorporated piecemeal over the next 20 years. In 1975 the Ellice Islands separated from the colony and in 1978 became the independent country of Tuvalu. The Gilberts obtained internal self-government in 1977, and formally became independent in 1979.

### **A.2.2 Democratic Credentials**

Kiribati is an independent country with a stable democracy. The government of the Presidency of Mr. Anote Tong came into power in July 2003 and has been stable since. The next general election is due in mid 2007.

Political parties exist but are more similar to informal coalitions in behaviour. They do not have official platforms or party structures. Most candidates formally present themselves as independents. Campaigning is by word of mouth and informal gatherings in traditional meeting houses.

### **A.2.3 Governance**

According to “Country Reports on Human Rights Practises”<sup>3</sup> “the government generally respected the human rights of its citizens, and the law and judiciary provide effective means of dealing with individual instances of abuse.

### **A.2.4 Regional Government**

The Government is attempting, with the assistance of the ADB and UNDP, to reduce the increasing migrating rate from outer islands to Tarawa have started through a Strengthening Decentralised Governance in Kiribati. There has been a protracted bid by the residents of Banaba Island to secede and have their island placed under the protection of Fiji. Because Banaba was devastated by phosphate mining, the vast majority of Banabans moved to the island of Rabi in the Fiji Islands in the 1940s. They enjoy full Fiji citizenship. The Kiribati Government has responded by including several special provisions in the constitution, such as the designation of a Banaban seat in the legislature and the return of land previously acquired by the government for phosphate mining. Only 200-300 people remain on Banaba.

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<sup>3</sup> Bureau of Democracy, Human Rights, and Labor, March 8, 2006

### **A.3 INSTITUTIONAL AND ADMINISTRATIVE FRAMEWORK**

#### **A.3.1 Constitution**

Kiribati is a democratic republic within the Commonwealth. The constitution promulgated at independence establishes Kiribati as a sovereign democratic republic and guarantees the fundamental rights of its citizens.

#### **A.3.2 Executive**

The President is both Head of State and Head of Government, and is nominated from among members of Parliament (Maneaba ni Maungatabu). After each general election, the new Maneaba nominates at least three but not more than four of its members to stand as candidates for president, locally referred to as "His Excellency Te Beretitenti." The voting public then elects the president from among these candidates. A cabinet of up to 10 members is appointed by the president from among the members of the Maneaba.

Although popularly elected, the president can be deposed by a majority vote in the Maneaba. In this case, a new election for President must be held. A person can serve as president for only three terms, no matter how short each term is. As a result of this provision, former Presidents Tabai and Tito are constitutionally forbidden from serving as president again.

#### **A.3.3 Legislative**

Kiribati has a 42 member unicameral parliament, the Maneaba. Forty members are elected for a four-year term by universal adult suffrage. Another seat is reserved for Banabans now living on Rabi Island (Fiji) and the Attorney-General sits (ex officio) as a non-elected member of the Parliament. The Speaker is elected to office by Members of the Maneaba but is not a Member of the Maneaba. The Speaker has neither an original nor a casting vote in Maneaba decisions.

#### **A.3.4 Judiciary**

The judicial system consists of the High Court, a court of appeal, and magistrates' courts. All judicial appointments are made by the president.

#### **A.3.5 Government Structure**

Government remains centralised, however policy to strengthen local councils is being assisted by the UNDP 'Strengthening Decentralised Government Programme' which began in early 2005. The overlapping and competing functions of the church, local councils and traditional decision making structures contribute to a complex political matrix on the outer islands.

Elected village councils run local governments in consultation with traditional village elders.

### **A.4 THE LEGAL SYSTEM OF KIRIBATI**

The legal system of Kiribati derives from the Constitution of 1979 and Acts of the Maneaba, the ordinances of the Gilbert and Ellice Islands Colony and the ordinances of the Gilbert Islands Colony made prior to 1979, the statutes of general application in force in England on 1 January 1961 and the substance of the English common law and doctrines of equity subject to the circumstances of Kiribati and its people and Kiribati custom as applied in the courts.

Law provides for an independent judiciary.

## A.5 THE NATIONAL ECONOMY & DEVELOPMENT STRATEGY

### A.5.1 Introduction

Kiribati's economy faces significant constraints common to most island atoll states. These include small size, remoteness and geographical fragmentation, a harsh natural environment with infertile soils and limited exploitable resources. However, Kiribati does have abundant ocean resources. The economy relies heavily on licence fees from distant water fishing nations supplemented by income from exports of seaweed, live fish and copra and remittances from Kiribati citizens employed abroad, mainly as seamen. Subsistence activities are still a major component of the economy of Kiribati. Donor contributions are important.

Natural resources in the land, lagoons and near-shore areas are extremely limited, but in the EEZ there are a resources; however these are difficult to utilise and are threatened by long term climate change. Accordingly, natural resource management and development are important for Kiribati's development.

### A.5.2 Economic Indicators

Domestic economic growth has been low for the last three decades, suffering from the end of phosphate revenue in 1979 which had accounted for roughly 80% of export earnings and 50% of government revenue. Per capita Gross Domestic product (GDP) was reduced by more than half between 1979 and 1981.

While GDP per capita ranks amongst the lowest (2004 - €605), Gross National Product (GNP) is higher (2004 - €1,089) and thus use of this data presents a less pessimistic picture (table 2). Given Kiribati's limited domestic production ability, it must import nearly all of its essential foodstuffs and manufactured items, and it depends on external sources of income for financing. The situation of the balance of payments is worsening.

A trust fund financed by phosphate earnings, the Revenue Equalization Reserve Fund (RERF), remains important providing interest and dividends used to balance the budget.

In 2005 the economy recovered due to an increase in construction works (with a US\$5.5 million (€4.4 million) sport complex with financing from Taiwan, and a US\$7.2 million (€5.8 million) Fishing Centre on Kiritimati funded by Japanese government aid and Kaimaki (Association for Japanese Fishing Purse seiners)). The construction projects provided employment opportunities to a lot of I-Kiribati people.

**Table 2: Kiribati: Selected Macro-Economic Indicators**

Indicator	Unit	2000	2001	2002	2003	2004	2004 (€)
GNP	AS'000	155,334	180,307	178,100	158,500	174,300	€ 103,136,095
GDP	AS'000	83,240	92,300	97,100	101,200	103,700	€ 61,360,947
GDP Growth	%	1.6	1.8	0.3	0	0.1	
Per Cap. GDP	A\$	985	1,063	1,124	1021	1,022	€ 605
Per Cap. GNP	A\$	1,838	2098	2038	1714	1841	€ 1,089
Inflation	%	0.40%	6.0%	3.2%	4.00%	2.30%	2.50%
Total Exports	AS'000	10,694	8,000	7,000	7,500	7,855	€ 4,647,929
Total Imports	AS'000	67,924	77,773	80,000	85,550	87,750	€ 51,923,077
Balance of Pay.	AS'000	-57,230	-68,773	-73,000	-78,050	-79,895	-€ 47,275,148

Sources: JC Kiribati / EC; Australian HC; Consultants

### **A.5.3 Economic Segments**

#### **A.5.3.1 The Service Sector**

The service sector accounts for 61 % of GDP with the major part of activity being Government related. Trade and hotels account for 14 % with tourism remaining underdeveloped although it has substantial potential.

The dominant employer is the inefficient public sector, including over twenty state-owned enterprises (SOEs).

#### **A.5.3.2 Marine Resources**

Marine resources are the mainstay of the economy. An estimated 80 per cent of households make a living through fishing.

Fishing fleets from a number of countries pay licensing fees to operate in Kiribati's territorial waters and these produce substantial revenue (see Section B). The revenue raising capacity of fishing licenses has a profound effect on the economy of the country, as it provides a major part of government revenue

#### **A.5.3.3 Development Aid**

Development Aid from foreign government and international financial institutions plays a key role in the social and economic development of Kiribati. In 2006, the total required development budget increased to A\$81.8 m (€50.2 million). The importance of foreign earnings and official aid in determining the development capacity of the economy highlights the need for purposeful management of Kiribati's external relations. The effective use of economic diplomacy to sustain flows of foreign aid has been an important arm of Kiribati's development strategies.

#### **A.5.3.4 Migrant Workers**

Remittances from Kiribati workers living abroad provide more than US\$7.5 million (€6 million) annually. An important source of employment and remittance income comes from merchant seamen employed on foreign vessels, including fishermen, mainly on Japanese vessels.

#### **A.5.3.5 Mining**

Phosphates were exported from Banaba Island from the early nineteen hundreds, but the deposits were exhausted in 1979.

#### **A.5.3.6 Agriculture**

Agricultural opportunities are limited.

#### **A.5.3.7 Tourism**

Tourism is a relatively small, but important domestic sector. Between 3,000 and 4,000 visitors per year provide US\$5 million to US\$10 million (€4 million to €8 million) in revenue. The main attraction is Christmas Island in the Line Islands on fishing and diving vacations. It is reported that a cruise ship makes weekly calls to Fanning Island.

### **A.5.3.8 Revenue Equalization Reserve Fund**

The RERF was established by the British colonial administration in 1956. Its purpose was to provide a source of funds with which to balance budget revenue shortfalls after the exhaustion of the phosphate on Banaba. In 2003, the Fund was valued at about €350 million.

### **A.5.4 Issues**

Transportation and communications are a challenge for Kiribati. International air links to the capital of Tarawa are provided only by weekly flights by Air Nauru (to Nauru, Honiara, Townsville and Brisbane), Marshall Air (to Guam) and Air Pacific (to Fiji). Kiritimati is served by a once weekly flight between Fiji and Hawaii and back. Air Kiribati provides service to most of the populated atolls in the Gilberts using small planes flying from Tarawa, however service can be affected by aircraft breakdowns. Cargo ships from Asia and Australia arrive on a monthly basis. Small ships serve outlying islands, including in the Line Islands, with irregular schedules.

### **A.5.5 Development Strategy**

The government adopted a National Development Strategy for the period 2004-2007. It is a multi-sector approach, identifying objectives and related activities. This plan is implemented by the individual ministries, who prepare an annual up-date examining progress made and the approach for the following year.

The strategy contains six key policy areas: economic growth; fair distribution; public sector performance, equipping people to manage change; conservation of physical assets and sustainable use of financial reserves by the ministries. Government has instituted a number of reforms including the adoption of results based planning and budgeting. Reforms to the public sector include placing permanent Secretaries on performance based contracts. In 2005 the Government established the Strategic and Risk Management Unit in the Office of the President to address core development issues. This unit coordinates the implementation of the Population Policy and the Climate Change Policy and Strategy. Government is also formulating strategies in key sectors including the education and health sectors. The later strategy should be assisted by the EU funded Improvement of Health Services to Outer Islands Project. The government is exploring the concept of growth centres as a way of addressing migration and outer island development. Under this concept Kiritimati and two islands in the Gilbert group will be given special attention and developed to provide services similar to those available on South Tarawa.

Fishery specific elements of the strategy are covered in section B.

## **A.6 RELATIONSHIPS WITH MAIN EXTERNAL PARTNERS**

### **A.6.1 Introduction**

Kiribati maintains friendly relations with most countries and has particularly close ties to its Pacific neighbours - Japan, Australia, New Zealand, and Fiji. Under President Tito, Kiribati had particularly close relations with China and allowed Beijing to establish a satellite tracking station on South Tarawa. In November 2003, however, President Tong announced the establishment of full diplomatic relations with Taiwan. China's tracking station closed shortly thereafter and the Chinese Embassy closed.

A branch office of the European Delegation in Fiji closed at the end of May, 2006. There are no member states represented in Kiribati after the closure of the British High Commission in 2005.

Kiribati opened its first overseas diplomatic mission in Suva in February 2002. Kiribati is a member of the Pacific Islands Forum and other regional organisations.

## A.6.2 International and Regional Organisations

Kiribati is a member of the Commonwealth and became a member of the United Nations on 14 September 1999. Kiribati is also a member of the ADB, IMF, World Bank, and some UN Organisations including UNESCO, WHO, ILO and FAO. I-Kiribati membership of specific fisheries organisations is discussed in Section B.

## A.6.3 Development Budget

Table 3 shows the source of total donor funds of A\$85.8 million in 2005. Most important are Taiwan (21.4%). ADB (17.7%), Australia (14.3%), Japan (13.0%) and the EU (10.82%). Development funding as a proportion of total government income is covered below, while the funding of specific fishery sector projects is described in Section B.

Individual Ministries develop projects which go forward for approval and possible financing with development aid.

## A.6.4 Development Partners

### A.6.4.1 European Union<sup>4</sup>

#### A.6.4.1.1 National Programmes

The Country Strategy Paper for 2002-2007 identified outer island social development as the strategic sector for European Union cooperation. The total financial allocation for 9 EDF is € 11 million; € 8.8 million is allocated to envelope A and € 2.2 million to envelope B.

**Table 3 Development Fund Budget by Donor**

	<u>2005</u>	<u>2005</u>		<u>2006</u>	<u>2006</u>
	<u>A\$'000</u>	<u>€ '000</u>	<u>%</u>	<u>A\$'000</u>	<u>€'000</u>
Revolving Fund	\$40	€ 25	0.05%		
Australia	\$11,165	€ 6,850	14.28%	\$8,952	€ 5,492
New Zealand	\$3,687	€ 2,262	4.72%	\$3,244	€ 1,990
Kiribati Gov.	\$2,969	€ 1,821	3.80%		
Canada	\$0	€ 0	0.00%		
USA	\$2,500	€ 1,534	3.20%	\$2,500	€ 1,534
World Bank	\$6,208	€ 3,809	7.94%	\$1,059	€ 650
Forum Secretariat	\$43	€ 26	0.06%		
NGO	\$0	€ 0	0.00%		
SPC	\$25	€ 15	0.03%		
FFA	\$298	€ 183	0.38%		
South Pacific REF	\$116	€ 71	0.15%	\$100	€ 61
Japan	\$10,186	€ 6,249	13.03%	\$9,000	€ 5,521
China	\$0	€ 0	0.00%		

<sup>4</sup> The main source of information presented in this section is "Joint Annual Report 2005 – Draft February 2006". European Commission / Government of Kiribati.

ADB	\$13,853	€ 8,499	17.72%	\$12,000	€ 7,362
Taiwan	\$16,739	€ 10,269	21.42%	\$10,148	€ 6,226
France	\$110	€ 67	0.14%		
EU	\$8,455	€ 5,187	10.82%	\$3,615	€ 2,218
UK	\$22	€ 13	0.03%		
UNDP	\$1,063	€ 652	1.36%	\$300	€ 184
WHO	\$325	€ 199	0.42%		
UNICEF	\$140	€ 86	0.18%		
UNFPA	\$112	€ 69	0.14%		
UNEP	\$100	€ 61	0.13%		
Others	\$3	€ 2	0.00%	\$3	€ 2
<b>TOTAL</b>	<b>\$78,159</b>	<b>€ 47,950</b>		<b>\$50,921</b>	<b>€ 31,240</b>
<b>Unfunded</b>	<b>\$7,658</b>	<b>€ 4,698</b>		<b>\$30,961</b>	<b>€ 18,994</b>
<b>TOTAL</b>	<b>\$85,817</b>	<b>€ 52,648</b>		<b>\$81,882</b>	<b>€ 50,234</b>

Source: 2005/06 Budget

The entire A envelope has been programmed for the 'Improvement of Health Services for the Outer Islands' project. This project is to be implemented by the Fiji School of Medicine under a Contribution Agreement. 10% of the A-envelope (€ 880,000) has been allocated to NSAs to be implemented by the umbrella NSA under a Memorandum of Understanding with the Government of Kiribati.

In addition to the 9th EDF, three programmes under 8th EDF are ongoing.

- i. Improvement of Health Services on the Outer Islands.
  - Budget € 8.8 million
  - Start date April 2005 : end date 2009
- ii. Solar Energy for Outer Islands
  - Budget € 4 million
  - Total Payments end 2005 : € 3.5 million
  - Start date 1999 : End date 31 December 2007
- iii. Kiribati Training Programme II
  - Budget € 6.4 million
  - Total Payments end 2005 : € 3 million
  - Start date 2001 : End date 31 December 2006
- iv. Support to Seaweed Industry
  - Budget € 1.5 million
  - Total Payments end 2005 : € 1 million
  - Start date 2000 : End date 30 November 2006
  - An extension of the Financing Agreement was granted in 2005 and project implementation will now end in November 2006 bringing to a close 10 years of EC support to seaweed farming in Kiribati.

The B-envelope (€ 2.2 million) has been programmed to assist Kiribati adapt to the effects of climate variability in accordance with the findings of the mid term review.

#### A.6.4.1.2 Regional Programmes

The regional allocation amounts to € 29m and includes three focal sectors: “Economic Integration and Trade” (€ 9m); “Human Resources Development” (€8m); and “Fisheries” (€ 5m). In addition, there is a non-focal sector, for extension of the 8th EDF programmes to the 6 new ACP countries (€ 7m).

- i. Pacific Regional Oceanic and Coastal Fisheries Programme.
  - Implementing Agency: SPC, Noumea
  - Budget: €8 million
  - Financing Agreement Signed: December 2001
  - Commencement: March 2002
  - Duration: 5 years
  - Project Closure: March 2007
  - This programme aims to address the information gaps for tuna stocks and reef fisheries, with the aim of strengthening the long-term sustainable management of the fisheries resources of the Western and Central Pacific Ocean (WCPO). The oceanic component, builds upon the work undertaken in the main tuna species of the 7th EDF assisted South Pacific Regional Tuna Research and Monitoring Programme (SPR TRAMP) programme, extending this to include the need for detailed analysis and monitoring of ‘bigeye’ tuna and by-catch species. The coastal component will involve a comprehensive comparative assessment of reef fisheries in the Pacific Islands region. This is groundbreaking research as no comparable activity of this kind has ever been undertaken in the Pacific Islands region.
- ii. Technical Assistance Support to the Regional Authorising Officer (RAO)
  - Implementing Agency: Pacific Islands Forum Secretariat (PIFS)
  - Budget: €1.3 million
  - Financing Agreement Signed: March 2003
  - Duration: 4.5 years
  - Project Closure: December 2007
  - The project is located at the PIFS under the Development and Economic Policy Division. The objective of the project is to provide technical assistance to the RAO (Secretary General, PIFS) to ensure the efficient coordination and implementation of the regional indicative programme in accordance with the Lomé and Cotonou Agreements. The project funds the position of two professional staff and two divisional assistants.
- iii. Regional Economic Integration Project (PACREIP)
  - Implementing Agency: Pacific Islands Forum Secretariat, SPTO, SPC
  - Budget: € 9.2 million
  - Financing Agreement Signed: February 2004
  - Duration: 5 years
  - Project Closure: June 2009
  - This programme will support regional economic integration of the Pacific ACP countries in two important ways. First, consolidation of the Pacific ACP countries as an integrated regional unit through the support to the establishment of a free trade area covering the Pacific ACP countries. And

second, the assistance in the engagement of the Pacific ACP countries as a regional unit in the wider regional and global processes, including the negotiation and subsequent operation of trade with developed country partners such as the European Union, and also in multilateral negotiations at the WTO. The programme is estimated to cost €14.3 of which €9.2 is funded by the EDF.

iv. Pacific Regional Coastal Fisheries Development Programme (COFISH)

- Implementing Agency: SPC
- Budget: €2.2 million
- Financing Agreement Signed: February 2004
- Duration: 4 years
- Project Closure: December 2007
- Coastal fishery is the main source of cash and subsistence for many rural communities. Coral reef fisheries in particular are characterised both by their strong influence on the everyday lives of ordinary women and men, and by the lack of hard information necessary for governments and communities to make decisions about the management of reef fisheries. The Secretariat of the Pacific Community (SPC) has *inter alia* the region's mandate for fisheries research and stock monitoring, including both oceanic and coastal components. Findings are used to promote the economic and social development of the region.

v. Development of Tuna Fisheries in the Pacific ACP Countries (DEVFISH)

- Implementing Agency: FFA & SPC
- Budget: €3 million.
- Financing Agreement Signed: December 2004
- Duration: 4 years
- Project Closure: December 2008
- The overall objective of this project is to increase the contribution from the sustainable use of marine resources to the poverty alleviation in Pacific ACPs. The project will contribute to this objective through a focus on the sustainable development of highly migratory oceanic living resources, particularly tuna fisheries. The purpose of the intervention is to contribute to the establishment of a concerted policy and economic environment conducive to the further development of Pacific ACPs owned fishing and processing operations and to an increased contribution of foreign fleets to the economic development of these countries. At present the economic contribution of the fisheries sector is poorly measured; the only performance measures available are catches or values of catches and fish trade data from existing national and regional reporting systems. These indicators are inadequate to measure the benefits received by P-ACPs at the level of the project objective and purpose. The project will build on the existing data, improve them with new indicators and regional workshops will be held to strengthen the capacity of national statistical administrations to improve measurement of benefits from tuna fisheries.

#### **A.6.4.2 Australia**

Australia is the major supplier of food, beverages, pharmaceuticals and services to Kiribati. Australian exports to Kiribati in 2003 totalled A\$30 million (€17.2 million). Australian imports (principally crustaceans and dried, salted and smoked fish) from Kiribati totalled A\$285,000 (€164,000) over the same period. Australian companies run the regular shipping line to Kiribati and have recently won contracts to supply telecommunications services to the outer islands. Australian currency is used as the currency of exchange in Kiribati and the ANZ Bank owns the only retail banking operation in the country.

Australia remains one of Kiribati's principal development partners. Australian assistance will cover human resource management, governance, health, education and law enforcement. Kiribati will also benefit from regional and multilateral projects funded by AusAID.

Australia also assists Kiribati in the surveillance of its large EEZ through the provision of an Australian-built Pacific Patrol boat, related defence training, periodic maritime surveillance flights and naval visits.

#### **A.6.4.3 New Zealand**

The goal of the New Zealand development cooperation programme with Kiribati 2002-2007 is “to contribute to the efforts of the Kiribati Government and people to alleviate poverty of opportunity and vulnerability to poverty through equitable and sustainable development”. This goal is supported by three primary programme objectives and six operational strategies. These objectives and strategies serve to focus the programme on areas of shared priority for the Kiribati Government and NZAID.

#### **A.6.4.4 Japan**

Japan has to date contributed approximately US\$104.3 million (€83.6 million) to the development of the Republic of Kiribati

#### **A.6.4.5 Taiwan**

Taiwanese aid to Kiribati amounted to A\$16 million (€10 million) in 2005 and is foreseen to rise in 2006.

#### **A.6.4.6 Asian Development Bank (ADB)**

Since joining ADB in 1974, Kiribati has received 6 loans totaling \$15.1 million (€12 million), of which 1 was active at the end of 2005. It also received 39 technical assistance projects totaling to \$ 11.4 million (€10 million), of which 1 was active at the end of 2005.

## A.7 BUDGETARY/FINANCIAL FRAMEWORK

The government budget is divided between the recurrent, which is appropriated through the Maneaba, and development, which is allocated to specific entities and projects. Table 4 shows the consolidated budget framework for the period 2004 to 2006.

In 2005, fishery licenses represented 46 % of total revenue and 91 % of non tax revenue. For 2006, total revenue is expected to increase by 10 % to A\$68 million (€42 million).

The expenditure side of the national budget improved in 2005 compared to the previous year and looks to improve more in 2006. In 2004 the overall deficit was A\$34.9 million (€20.7 million), reducing to A\$23.6 million (€14.5 million) in 2005, and expected to shrink further in 2006 to A\$15 million (€9.2 million).

**Table 4: Consolidated Budget Framework 2004 – 2006**

	Actual 2004	Revised 2005	Budget 2006	
	000 Aus	000 Aus	000 Aus	€'000
<b>Centralised Government Revenue</b>	<b>\$61,113</b>	<b>\$58,727</b>	<b>\$64,127</b>	<b>€ 39,342</b>
<u>Tax Revenue</u>	<u>\$28,987</u>	<u>\$27,710</u>	<u>\$30,110</u>	€ 18,472
<i>of which</i>				
Import Duties	\$17,660	\$18,000	\$20,000	€ 12,270
<u>Non Tax Revenue</u>	<u>\$32,126</u>	<u>\$31,017</u>	<u>\$34,017</u>	€ 20,869
<i>of which</i>				
Fishing				
Licenses	\$28,938	\$28,000	\$31,000	€ 19,018
<b>Ministries Revenue</b>	<b>\$3,160</b>	<b>\$2,945</b>	<b>\$3,939</b>	<b>€ 2,417</b>
<b>TOTAL RECURRENT REVENUE</b>	<b>\$64,273</b>	<b>\$61,672</b>	<b>\$68,066</b>	<b>€ 41,758</b>
Recurrent Expenditure	\$69,099	\$67,245	\$72,122	€ 44,247
Other Commitments	\$30,024	\$18,057	\$10,954	€ 6,720
<b>TOTAL EXPENDITURE</b>	<b>\$99,123</b>	<b>\$85,302</b>	<b>\$83,066</b>	<b>€ 50,961</b>
<b>BUDGET SURPLUS/DEFICIT</b>	<b>-\$34,850</b>	<b>-\$23,630</b>	<b>-\$15,000</b>	<b>-€ 9,202</b>

Source: Budget 2005/06

**Table 5: Operating Budget by Ministry**

	<u>31.12.06</u>		<u>31.12.05</u>	<u>31.12.04</u>
	<u>000 A\$</u>	<u>000€</u>	<u>000 A\$</u>	<u>000 A\$</u>
<b>Appropriated and Statutory Budget</b>				
Ministries	\$71,935	€ 44,132		
Debt Servicing	\$176	€ 108		
Subsidies, Grants etc.	\$10,954	€ 6,720		
	\$83,065	€ 50,960	\$84,607	\$96,187
<i>of which</i>				
MFMRD	\$1,877	€ 1,152	\$1,755	\$1,792
MELAD	\$2,665	€ 1,635	\$2,501	\$2,498
<b>Recurrent and Development Budget</b>				
Donor Contributions	\$50,920	€ 31,239		
Total Spend	\$50,920	€ 31,239		
<i>of which</i>				
MFMRD	\$215	€ 132		
MELAD	\$910	€ 558		
<b>Total Expenditure</b>	<b>\$133,985</b>	<b>€ 82,199</b>		
<i>of which</i>				
MFMRD	\$2,092	€ 1,283		
MELAD	\$3,575	€ 2,193		

Source: Budget 2005/06

Table 5 shows the operating budget of the Ministries. Of the A\$83 million (€50.9 million) from the appropriated and statutory budget for 2006, MFMRD has a 2.3 % share (2.1 % in 2005 and 1.9% in 2004) and MELAD 3.2 % (3.0 % in 2005 and 2.6% in 2004).

The recurrent and development budget in 2006 is A\$50.9 million (€31.2 million). In 2006, this budget provides for 38% of total expenditure. The share of MFMRD in 2006 is 0.4 % while that of MELAD is 1.8 %, providing relative shares in total expenditure of 1.6 % and 2.7 %.

## A.8 SOCIAL POLICY AND INDICATORS

Kiribati is often described as a society in transition, moving from a subsistence economy supported by extended families to one where money plays an increasingly important role and where families are separated by migration, urbanisation and other external factors. This concept of a changing society is addressed by the key policy area of government; equipping people to manage change. These changes are having an enormous impact on the structure of the society and its traditions that has resulted in major changes in the country over the recent years

Income and other resources are not evenly distributed and some households are becoming disadvantaged. Poverty is of increasing concern on South Tarawa to where there is migration from the outer islands. Here, the poor are cut-off from the support of the traditional economy which provided an effective safety net. Relative poverty is also becoming a concern for outer islands' populations where there is very limited access to services, amenities and paid employment. The participation of women and youth in decision-making, although improving, remains relatively low.

The rural-urban drift appears to be continuing placing ever increasing pressure on urban South Tarawa and all services. Access to clean water and sanitation to be below 50% of the population. Food security is tenuous with urban South Tarawa highly dependant on imported foods.

The ADB carried out a study in 2002<sup>5</sup> which estimated that 39% of households on South Tarawa and on the outer islands have per capita expenditure levels below the Food Poverty Line and 51% of households in South Tarawa and 50% in the outer islands had expenditure below the Poverty Line.

In 2004 the ADB and the Secretariat for Pacific Countries undertook an analysis of poverty as perceived by the I-Kiribati. The report of this study is still in draft form however the initial findings were presented at a public workshop in July 2005. The I-Kiribati did not identify absolute poverty in Kiribati but widespread hardship is experienced. Hardship was defined as *'having difficulties in providing for family's needs, living on credit and begging from relatives and friends'*. Wellbeing was defined by the I-Kiribati as comprising of a regular and high income to meet needs, "good" food that is easily accessible and abundant, good health and living a sensible life, a good home environment (clean, not overcrowded, well managed), being hardworking and productive, being able to work and the availability of basic services and infrastructure. These findings underline the value given to self reliance and the importance of the core structure of Kiribati society which is the family unit.

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<sup>5</sup> The Poverty Line for Kiribati, ADB November 2002

Causes of hardship were identified as increased prices of basic commodities, poor home environment caused by overcrowding, the decline in natural resources, lack of income or low incomes and the loss of traditional values and skills particularly amongst youth. Other factors identified were increasing use of alcohol, limited food due to cargo shortages, burdensome contributions to the church and increasing land issues caused by erosion, unresolved ownership and low lease incomes.

The average life expectancy for men is 58.2 years and for women 67.3 years. Out of 14 countries in the Pacific, Kiribati ranks 11th on the UNDP's Human Development Index and 129<sup>th</sup> overall. Basic development indicators for health, education and life expectancy (58.2 years for men and 67.3 years for women) are amongst the poorest in the Pacific region. Infant mortality and child morbidity rates are particularly high and access to water and sanitation facilities is a persistent problem. Social investment has been increasing, but it remains insufficient to provide acceptable standards of service throughout the country. Indicators of maternal and infant mortality have been improving but still leave room for further improvement.

Concerns raised most often by the Kiribati government and people relates to one group of society, which is the youth. Approximately 1,700 young people enter the job market annually for 500 jobs in the formal sector. The education system requires reform so that it equips young people more appropriately for a wider range of opportunities. Amongst young people, there is increasing questioning of traditional social structures and behavioural problems such as increased drinking, violence and suicides. The ADB/SPC study prioritises youth issues and income generation as key areas to be addressed by government and donors.

Table 6 highlights the objectives of the Millennium Goals and current indicators.

- Goal 1: Eradicate extreme poverty and hunger;
- Goal 2: Achieve Universal Primary Education;
- Goal 3: Promote gender equality in primary and empower women;
- Goal 4: Reduce child mortality;
- Goal 5: Improve maternal health;
- Goal 6: Combat HIV/AIDS, malaria and other diseases; and
- Goal 7: Ensure Environmental Sustainability

**Table 6: Kiribati: Millennium Goals**

Target / Goal	Indicators	Status based on the SPC MDG report (2004 unless otherwise stated)	Status in Kiribati based on data provided by Responsible Ministry	Comment: Analysis/ Evaluation
<b>Goal 1: Eradicate extreme poverty and hunger</b>				
Target 1: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day	Proportion of population below \$1 per day Poverty gap ratio (incidence x depth of poverty) Share of poorest quintile in national consumption	2000: 38% (1996)  not available  2000: 6%(1996)		
Target 2: Halve, between 1990 and 2015, the proportion of people who suffer from hunger	Prevalence of underweight children (under five years of age)  Proportion of population below minimum level of dietary consumption	1990: 5.05% source: Regional report on MDG Sept 2000 1990: <5% (1996) source: ADB not available	% of Underweight infant at birth (<2500g) 8.79 (1991); 8.45 (1992); 4.46 (1993); 5.11 (1994); 5.68 (1995); 6.09 (1996); 5.86 (1997); 5.03 (1998); 6.07 (1999); 5.33 (2000); 6.44 (2001); 8.17 (2002); 7.1 (2003); 6.67 (2004) not available	
<b>Goal 2: Achieve Universal Primary Education</b>				
Target 3: Ensure that, by 2015, children everywhere boys and girls alike, will be able to complete a full course of primary schooling	Net enrolment ratio in primary education Proportion of pupils starting Grade 1 who reach Grade 5 Primary. Literacy rate of 15-24 year olds	103% (2001) S.Tarawa 110%; M 104%; F 117% Outer islands 99% M 98% F 102%	Net enrolment ratio <sup>6</sup> in primary education 85.56% (2000); 80.24% (2001); 99.05% (2002); 102.77% (2003); 97.76% (2004)  79.15% (2004)	The participation of these students if over 100% simply means that all students are enrolling in school.  At the moment only 2004 data is available. The 79.15% shows that of students actually starting grade one, only 79.15% of them complete grade 4 by 2004.
<b>Goal 3: Promote gender equality in primary and empower women</b>				
Target 4: Eliminate gender disparity in primary and secondary education preferably by 2005, and to all levels of education by 2015	Ratio of girls to boys in primary and secondary education (2001) Ratio of literate females to males of 15-24 years old Share of women in wage	Pri: 97:100 Sec: 100: 80  100% (2000)	Ratio of girls to boys in primary school 94: 100 (2002); 93: 100 (2003); 98: 100 (2004)	

Target / Goal	Indicators	Status based on the SPC MDG report (2004 unless otherwise stated)	Status in Kiribati based on data provided by Responsible Ministry	Comment: Analysis/ Evaluation
	employment in the non-agricultural sector Proportion of seats held by women in national parliament	37% (2000) 2 in 36 (2001)		
<b>Goal 4: Reduce child mortality</b>				
Target 5: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate	Under five-mortality rate Infant Mortality rate  Proportion of 1 year old children immunized against measles	not available 43 (2000) 65 (1995) 72% (2000)	27 (1990), 25 (1995), 13 (2000) 67(1990); 62(1995); 43(2000)  75.1%(1990); 61.8%(1991); 85.2%(1992); 85.7%(1993); 69.1%(1994); 55.2%(1995); 63.7%(1996); 81.8%(1997); 78.3(1998); 63.4%(1999); 72.5%(2000); 76.5%(2001); 88.2%(2002); 79.7%(2003); 56%(2004)	Estimating mortality annual in Kiribati is complex since many families do not attend the Health facilities or register with the Civil Registrar about their deaths. For this reasons, the infant Mortality Rate (IMR) and the Under Five Mortality Rate figures can only be obtained from the National Population Census (5 year interval)-which are at best desired from estimating.  The drop to 56% in 2004 was due to the use of the estimated denominator for that particular year.
<b>Goal 5: Improve maternal health</b>				
Target 6: Reduce by three-quarters, between 1990 and 2015, the maternal mortality rate	Maternal mortality ratio (per 100000 live births)  Proportion of births attended by skilled health personnel	56(2000) 225(1995)  75-80% (2000)	Maternal Mortality per 100,000 85 (1991); 43 (1992); 256 (1993); 85 (1994); 41(1995); 41(1996); 124(1997); 0(1998); 41(1999); 0(2000); 164(2001); 109(2002); 164(2003); 218(2004)  Proportion births attended Health 70.9%(1991); 72.6%(1992); 72.1%(1993); 73.8%(1994); 76.5%(1995); 78.6%(1996); 81.1%(1997); 85.2%(1998); 87.2%(1999); 83.6%(2000); 88.9%(2001); 89.1%(2002); 89.1%(2003); 88.3%(2004)	Maternal Mortality Ratio is given by the number of deaths per 100,000 live births in a given year. This ratio based on the 100,000 lives births is not appropriate to countries with small population. According to the table, the number of death varies from 1 to 6 in those years (1990-2004) which is minimal. The denominator is taken from National Census  The proportion of births were attended by Health skilled workers ranges from 70% to 89% which is good but still it needs

Target / Goal	Indicators	Status based on the SPC MDG report (2004 unless otherwise stated)	Status in Kiribati based on data provided by Responsible Ministry	Comment: Analysis/ Evaluation
				further improvement
<b>Goal 6: Combat HIV/AIDS, malaria and other diseases</b>				
Target 7: Have halted by 2015, and begun to reverse, the spread of HIV/AIDS	HIV prevalence among 15-24 year old pregnant women  Contraceptive prevalence rate  Number of children orphaned by HIV/AIDS	Not known but proportion is very low  28% (2000)  Not known but number would be very low	Not Available Reported HIV/AIDS cases: 2(1991); 2(1995); 11(1996); 6(1997); 4(1998); 7(1999); 3(2000); 0(2001); 1(2002); 5(2003); 4(2004) 18.77% (1990); 21.85%(1991); 19.53%(1992); 21.04%(1993); 20.5%(1994); 18.77%(1995); 21.85%(1996); 19.53%(1997); 21.04%(1998); 20.5%(1999); 20.13%(2000); 18.53%(2001); 22.09%(2002); 21.95%(2003); 21.48%(2004)  Not Available	Kiribati has one of the highest rates of HIV/AIDS among the Pacific countries. At present there are 45 cases of HIV/AIDS giving the rate of 5 per 10,000 people. The table provides the total number that means 36% of women.
Target 8: Have halted by 2015, and begun to reverse the incidence of malaria and other major diseases	Prevalence and death rates associated with malaria Prevalence and death rates associated with tuberculosis  Proportion of TB cases detected and cured under DOTS (Directly Observed Treatment Short Course)	not applicable  100%	Indicator is not relevant  15(1991); 6(1992); 15(1993); 17(1994); 16(1995); 6(1996); 12(1997); 16(1998); 6(1999); 5(2000); 7(2001); 7(2002); 10(2003); 5(2004) 81%(1999); 84%(2000); 89%(2001); 86%(2002); 77%(2003); na(2004)	Tuberculosis us a major public health problem with a total death 143 in 1991 to 2004. DOTS contributed a lot in controlling the spread of TB
<b>Goal 7: Ensure Environmental Sustainability</b>				
Target 9: Integrate principles of sustainable development into the country policies and programmes and reverse the loss of environmental resources	Proportion of Land area covered by forest Land area to protected to maintain biological diversity GDP per unit of energy use (as prosy for energy efficiency) Carbon dioxide emission per capita	Nil  Approx. 200sq km on Xmas  n.a not available		
Target 10. Halve by 2015; the proportion	Proportion of population with	47%(2000)		

Target / Goal	Indicators	Status based on the SPC MDG report (2004 unless otherwise stated)	Status in Kiribati based on data provided by Responsible Ministry	Comment: Analysis/ Evaluation
of people without sustainable access to safe water drinking	sustainable access to an improved water source (piped to household or standpipe)			
Target 11: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers	Proportion of population with access to improved sanitation (flush or water-seal latrines) Proportion of people with access to secure tenure	55% (2000)  All land is customary (or government) owned and cannot be alienated, however only a small proportion is registered in secure title. Some customary land has been sold and there are now a small number of landless people especially on Sth. Tarawa		

## **A.9 ENVIRONMENTAL POLICY AND INDICATORS<sup>7</sup>**

### **A.9.1 Overview**

Kiribati is situated in the dry belt of the equatorial oceanic climatic zone, rainfall varies from 1,000 mm to 3,000 mm per year. During ENSO periods the islands suffer severe, prolonged droughts and are highly vulnerable to super tides and storm surges. Climate variability and climate change pose very significant development challenges given the highly vulnerable nature of the Kiribati atolls.

Common to island nations the atoll islands of Kiribati are extremely vulnerable to internal and external pressures. There are a wide range of interconnected resource and environmental issues affecting sustainable development. These include climate variability and change, sea-level change, population growth, environmental degradation and resource management.

More specific challenges to sustainable development include groundwater depletion; increased salinisation and pollution from sewerage and animal excreta; waste disposal; over-fishing of reefs and lagoons; coastal erosion and beach mining; deforestation and the breakdown of traditional subsistence production systems. Surveys of the coastline show considerable movement which together with the increased incidence of storm surges and floods pose a threat to physical infrastructure. Proper management of coastal areas under threat is now an urgent issue.

### **A.9.2 Water and Sanitation**

Fresh water is a fundamental resource for small island nations. Most development plans are pivotal on the availability of fresh water. Clean water and proper sanitation enhance the health and productivity of the work force and have particular implications for the children and future generations.

The availability of water has been a long-standing problem throughout Kiribati. Natural sources of permanent potable water are limited to groundwater in freshwater lenses. These freshwater lenses are floating on the higher-density seawater beneath the atolls. They are highly vulnerable due to loss of land and inundation resulting from climate change.

Other sources of water include hand-pump wells, roof catchments and galleries. Groundwater resources in Kiribati are commonly contaminated from human and other solid wastes. This arises from rapid population growth and urbanisation, inadequate use of proper toilet facilities and lack of infrastructure in the sanitation sector. Due to the shallow water tables, seepage of waste into the fragile groundwater system is a common occurrence in Kiribati.

### **A.9.3 Global Climate**

The warming of the earth's atmosphere will impact on the Pacific Island economies affecting health, coastal infrastructure, water resources, agriculture, forestry and fisheries. In Kiribati, there is evidence of increasing vulnerability to extreme weather events as growing urbanization, degradation of coastal ecosystems and growth of coastal infrastructure intensify the land and the community's exposure to climate events.

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<sup>7</sup> The main source of information presented in this section is "Joint Annual Report 2005 – Draft February 2006". European Commission / Government of Kiribati.

Assessment of the economic impact of climate change is of concern to Kiribati. If climate change scenarios materialise Kiribati could suffer economic damages of €20 million a year by 2050. In years of strong storm surge up to 54% of South Tarawa could be inundated with capital losses up to €270 million. The World Bank recommends taking immediate adaptation measures including those that would be justified even in the absence of climate change (no regrets measures) and enhancing planning processes that will enable communities and the Government of Kiribati to adapt to change including climate change.

#### **A.9.4 Coastal Erosion**

Coastal erosion is one of the major problems facing Kiribati. Most activities such as recreation, liquid and solid waste disposal, extraction of sand and gravel rock for construction and building of roadways take place along the shorefront of Kiribati. However, due to the lack of understanding of the wave and current dynamics around the islands and the misconception that the coasts will recover, these atoll environments are under severe stress and are affected by significant erosion, pollution and damage to marine coastal biodiversity.

Activities that contribute to the increasing problem of erosion on Kiribati include fill reclamation for road construction, blasting of reefs for boat channel construction, and aggregate mining for construction purposes. Coastal erosion is most acute near the urban centre of South Tarawa, where population density, unregulated shorefront development and overexploitation of coastal resources are the highest.

#### **A.9.5 Minerals**

Kiribati is naturally endowed with several types of mineral resources. These range from terrestrial minerals such as phosphate and gypsum to offshore cobalt-rich crusts and manganese nodules in the country's EEZ.

In the period 1900-1979, phosphate mining was undertaken in Banaba. This ceased in 1979 after the major deposits of fossilised sea-bird guano became exhausted. However, there are still a few un-mined areas on the island. Recently mining companies have shown an interest in mining this remaining phosphate on Kiribati.

The other terrestrial and coastal resources include sand, coral, gravel and limestone aggregate that are feeding into the upsurge in construction activities. Offshore exploration is still at a nascent stage in Kiribati. Surveys, however, reveal the extensive presence of cobalt-rich crusts and poly-metallic manganese nodules in the EEZ around Kiribati. The future exploitation of these minerals has the potential to provide great economic benefits to the country. Several exploration companies have expressed interest in these findings and have applied for exploration licences assess the scope and potential for development.

Environmental pollution, adverse social impact and economic redistribution are the biggest concerns arising out of mining and mineral exploration. Offshore mining could unleash a whole new host of problems ranging from the irreversible destruction of the fragile ecosystem to loss of fishing grounds.

### **A.9.6 Energy**

Kiribati relies heavily on imported fossil fuels for its commercial and transportation energy needs, but many problems are faced by the energy sector. Diesel generators supply electricity to most of the urban centres like Tarawa. For the outer islands, however, where there is no regular supply of fuel for generators, solar photovoltaic technology has been promoted. Importing fossil fuels for energy generation has been putting an increasing strain on the economy of Kiribati, while the technical expertise and infrastructure needed to utilise the resources better are lacking. The use of alternative, renewable energy sources will help to offset future dependence on imports and contribute to the overall aim of achieving the maximum degree of energy independence, while providing opportunities for development primarily in the rural sector.

### **A.9.7 Policy**

The government's National Development Strategies 2004-7 identified climate change as a serious risk to economic growth and calls for ways to minimise and manage the loss. The government has adopted a Policy statement on Adaptation to Climate Change and aims to mainstream adaptation planning throughout its development process. Assistance will be required to strengthen planning and monitoring mechanisms. Adaptation strategies and the Environment Act 1999 are the two key pillars of government's current environmental policy.

In addition as reported by the ADB its publication "Kiribati-Monetisation in an Atoll society 2002" in the last decade Kiribati has prepared the National Environment Management Strategies (1992), The National Biodiversity Strategy Action Plan (2000), the National Adaptation Programmes of Action on Climate Change (2001), the National Report to the World Summit on Sustainable Development (2002) and most recently a priority Environmental Concerns report prepared for the Kiribati International Waters Programme.

Elsewhere, Kiribati's accession to the United Nations and integration into the global economy brings with it enormous obligations with regard environmental protection. Monitoring the EEZ with regard to biodiversity, sea dumping, trans-boundary movement of hazardous wastes and protection of migratory fish are just some of the issues that Kiribati has to consider.

As the country develops and more goods are consumed, the issue of domestic waste disposal becomes critical. This is especially the case in South Tarawa but is also problematical on outer islands. The Government has developed a basic waste disposal framework and waste management on South Tarawa has been greatly improved through a recycling programme supported by UNDP.

The importance of climate and sea-level change and variability requires the adoption of immediate adaptation measures in particular for coastal management and environmental vulnerability assessment. Aggregate mining for construction as population and migration increase will have a highly detrimental impact on coastal areas increasing its vulnerability to erosion. Coastal erosion also threatens water lenses and the coastal ecosystem. Control of aggregate mining requires alternative sources for mining aggregate and effective implementation of the Environmental Act 1999.

Environmental Impact Assessment (EIA) procedure is integrated through all prescribed developments however monitoring equipment and expertise is very limited and requires additional support if environmental impact is to be monitored effectively. In addition, being prone to storm surges and drought there is a need to set up efficient disaster prevention and preparedness mechanisms, including climate adaptation measures, prediction mechanisms and monitoring systems with a view to reducing the consequence of disasters.

## **A.10 INVESTMENT AND THE PRIVATE FOREIGN INVESTMENT**

### **A.10.1 Policy**

The Government of Kiribati aims to improve on the growth performance of the country by encouraging private sector investment, diversification of the economy and instituting appropriate policies and measures.

### **A.10.2 Foreign Investment Commission**

Overseas investment in Kiribati is controlled under the *Foreign Investment Act 1985* and the *Foreign Investment Regulation 1986*.

Foreign investment is generally encouraged and no discrimination is shown between foreign and local investors. Investors who wish to establish an enterprise must make application to the Foreign Investment Commission (FIC) which is chaired by the Secretary for Commerce, Industry and Tourism.

Granting of FIC licences is on a case by case basis.

All proposals put to the Commission are considered under the following guidelines:

- i. the potential employment of I-Kiribati (the indigenous population);
- ii. net export contribution;
- iii. the balance between local resource exploitation and the size of the foreign investment;
- iv. the potential for transferring to I-Kiribati foreign managerial and technical skills required in the enterprise;
- v. the extent of competition with local enterprises; and
- vi. the impact on social and natural environments.

For investment over about €140,000, approval must be sought from Cabinet on advice from the FIC. For investment less than that amount, the FIC may approve the investment directly. The average time involved in processing an investment application from point of submission to final approval is two to three months.

If the application is accepted, the FIC often sets performance criteria relating to employment, training of local staff, and production targets, including a timetable for implementation. To ensure compliance, the firm is expected to submit quarterly reports and annual accounts which contain a revenue statement and balance sheet.

### **A.10.3 Controls**

An investor may enter into business as a full foreign investment or as a joint venture investment.

Disputes are addressed to the Foreign Investment Commission. Advice is then given by the FIC to the Foreign Investment Secretariat as to whether an investigation should be undertaken and a report produced for FIC consideration.

There is no foreign exchange control in Kiribati, nor is there a central monetary authority. However, the Bank of Kiribati monitors foreign reserves and domestic currency requirements. The Government of Kiribati imposes restrictions on foreign investment only where local expertise or local industry already exists (for example, handcraft) or where the local, natural or social environment could be adversely affected.

Land in the country cannot be bought by foreigners. However, for investment purposes, land can be leased on a long-term basis. All enquires and approval for Government land is handled by the Lands and Survey Division (LSD) of the Ministry of Home Affairs. Investors may enter into direct negotiation with private landowners on the terms and conditions for leasing.

At present, no export duty is charged on exportable items. There are also no restrictions on items for export except the export of marine products. An export license from the Fisheries Division of the Ministry of Natural Resources and Development is required for marine products.

Import duty exemptions may be provided for investment project items. Customs clearance procedures apply to any goods imported into Kiribati.

The government of Kiribati is considering joining the Multilateral Investment Guarantee Agency (MIGA) and the International Centre for the Settlement of Investment Dispute (ICSID).

Investors securing their rights to own and operate their business in Kiribati are able to obtain Government guarantees to repatriate after-tax profits, original capital, loan and interest repayments, know-how fees and other service charges.

#### **A.10.4 Incentives**

A range of incentives are offered to those wishing to invest in Kiribati. These are not automatic but available on a case-by case basis. It is up to the investor to initiate any request for such assistance.

Any company that wishes to establish a business in Kiribati may apply to the Internal Revenue Board for 'pioneer status'. This allows for a reduced company tax rate of 10 percent for five years with the exception of business operations on South Tarawa and Christmas Island.

New plant and equipment are allowed a depreciation allowance of 25 percent in the first year and 15 percent thereafter on a reducing balance, while used plant and equipment are allowed a flat 15 percent. New and used buildings are depreciated at five percent of cost in the first year and on a straight-line basis thereafter. Depreciation allowance for new ships is 20 percent in the first year and 10 percent thereafter on a straight line basis, while the rate for used ships is set at 10 percent.

#### **A.10.5 Analysis**

Discussion with the Permanent Secretary (PS) of the Ministry of Commerce, Industry and Cooperatives emphasised the problems for Kiribati in attracting foreign investment and that, to date, there has been limited success, with the only notable exceptions to extremely small scale investments being by ANZ Bank and Punjas, a Fijian flour maker.

The main problems relate to the isolated location of Kiribati, which increases the cost of doing business, and difficulties in communication and transport. Taxation is high, and the level of bureaucracy was said to be a great disincentive. Infrastructure (ports, airports, telecommunications) needs improvement. In addition, there is lack of competition in the banking sector. Further complications are that local investors do not have the capacity to finance large scale projects, while there is a high degree of state involvement in the private sector through SOEs.

### A.11 EXTERNAL TRADE ENVIRONMENT AND PATTERNS

Trade data is only available up until 2003. As shown in Table 7, total exports in 2003 were A\$4.5 million (€ 2.6 million). This represented a 71 % decline compared to 1999 and 87 % compared to 1975. It is understood that exports in 2004 decreased to A\$4 million (€2.4 million). In contrast, imports of A\$79.5 million (€45.7 million) in 2003 were 125 % of the 1999 total and 857 % of that in 1975. It is reported that imports were A\$97 million (€59.5 million) in 2005 and A\$87 million (€51.5 million) in 2004. The increase was due to imported infrastructure components and materials for various government projects carried out in 2005.

Table 8 shows that Asia is the main export destination, but Oceania is the main source of imports. There is limited trade with EU member states.

Key export products are aquarium fish, seaweed and copra (table 9). It is reported that there was a significant drop in the exportation of Copra in 2004 and 2005 after the establishment of the Copra Mill. Although there was an increase in the copra production, 810 tons was required for the Copra mill at a lower price as compared to the world market price.

**Table 7: Kiribati: Balance of Trade**

	Exports			Imports	Balance of
	Domestic	Re-exports	Total	Total	Trade
	A\$'000	A\$'000	A\$'000	A\$'000	A\$'000
1975	\$27,734	\$0	\$27,734	\$9,280	\$18,454
1985	\$5,792	\$266	\$6,058	\$21,582	-\$15,524
1999	\$12,759	\$827	\$13,586	\$63,720	-\$50,134
2000	\$5,512	\$666	\$6,178	\$67,924	-\$61,746
2001	\$5,675	\$791	\$6,466	\$75,008	-\$68,542
2002	\$5,176	\$1,146	\$6,322	\$91,585	-\$85,263
2003	\$3,676	\$794	\$4,470	\$79,496	-\$75,026
<b>2003</b>	<b>€ 2,113</b>	<b>€ 456</b>	<b>€ 2,569</b>	<b>€ 45,687</b>	<b>-€ 43,118</b>

**Table 8 Kiribati: Balance of Trade by Country 2003**

	Exports			Imports	Balance of	
	Domestic	Re-exports	Total	Total	Trade	
	A\$'000	A\$'000	A\$'000	A\$'000	A\$'000	€'000
Oceania	\$119	\$608	\$727	\$65,397	-\$64,670	-€ 37,167
Asia	\$3,238	\$153	\$3,391	\$11,920	-\$8,529	-€ 4,902
Americas	\$319	\$14	\$333	\$900	-\$567	-€ 326
UK	\$0	\$0	\$0	\$734	-\$734	-€ 422
Germany	\$16	\$0	\$16	\$83	-\$67	-€ 39
Switzerland	\$0	\$0	\$0	\$28	-\$28	-€ 16
Other						
Europe	\$16	\$0	\$16	\$1,233	-\$1,217	-€ 699
<b>All</b>	<b>\$3,676</b>	<b>\$794</b>	<b>\$4,470</b>	<b>\$79,496</b>	<b>-\$75,026</b>	<b>-€ 43,118</b>

**Table 9 Kiribati: Exports by Commodity**

	1999	2000	2001	2002	2003	
	A\$'000	A\$'000	A\$'000	A\$'000	A\$'000	€'000
<i>Domestic</i>						
Copra	\$8,987	\$2,501	\$1,157	\$1,029	\$2,114	€ 1,215
Fish	\$311	\$195	\$195	\$27	\$12	€ 7
Petfish	\$1,770	\$193	\$1,280	\$2,500	\$311	€ 179
Sharkfins	\$210	\$404	\$361	\$437	\$469	€ 270
Seaweed	\$1,103	\$1,699	\$1,356	\$652	\$385	€ 221
Beche de Mer	\$160	\$529	\$519	\$454	\$254	€ 146
Handicrafts	\$0	\$0	\$34	\$0	\$0	€ 0
Other domestic	\$480	\$1	\$1,076	\$77	\$131	€ 75
Sub Total	\$13,021	\$5,522	\$5,978	\$5,176	\$3,676	€ 2,113
<i>Re-Exports</i>						
Personal Effects	\$449	\$347	\$154	\$296	\$157	€ 90
Films	\$1	\$3	\$0	\$0	\$0	€ 0
Scrap metal	\$9	\$10	\$0	\$0	\$0	€ 0
Others	\$585	\$297	\$334	\$850	\$637	€ 366
Sub Total	\$1,044	\$657	\$488	\$1,146	\$794	€ 456
<b>Total</b>	<b>\$14,065</b>	<b>\$6,179</b>	<b>\$6,466</b>	<b>\$6,322</b>	<b>\$4,470</b>	<b>€ 2,569</b>

## **SECTION B: ANALYSIS OF THE FISHING SECTOR AND INDUSTRY**

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### **B.1 COASTAL WATER BODIES AND ENVIRONMENT**

#### **B.1.1 Oceanographic Features and Coastal Topography**

Each of the three main island groups (the Gilbert Group in the west, the Phoenix Group in the centre, and the Line Islands in the east) is surrounded by its own discrete portion of the EEZ. As the islands are distant from each other, this provides a total EEZ of 3.5 million square kilometres. These islands, which total only 810 km<sup>2</sup> in area and 1,961 km of coastline, consist of low-lying (max 4 m) coral atolls are surrounded by fringing or barrier coral reefs, with the exception of Banaba which is a raised (87 m high) limestone island. The distance between the eastern and western extremes of the EEZ is over 4,500 km. The total continental shelf area is 2,666 km<sup>2</sup> and the territorial sea (up to 12 nautical miles) is around 71,961 km<sup>2</sup> in area.

Kiritimati which lies just north of the equator and some 2,566 km west and north of Tarawa is the largest island in Kiribati and the largest purely coralline island in the world. The major NW portion of the island encloses a large lagoon studded with coral patches which is exposed to easterly winds and currents. In general the archipelago's islands have sandy, rubbly, coral soils and even on islands with high rainfall drought conditions occur frequently because of the porosity of the soils. The climate is influenced by the steady flow of the north-east and south-east trade winds towards the equator. These winds converge to form a band of low pressure tropical air which generally brings disturbed showery weather. Mean annual temperature is 28°C. Rainfall varies considerably and tends to increase with distance from the equator. The wettest months are from December to February; the driest are August, September and October. There are no rivers, lakes or other freshwater impoundments in Kiribati, and therefore no freshwater fisheries.

Generally the tides in Kiribati conform to the mid-ocean standard ranges - from about 0.5m at neaps to nearly 2m at springs.

The marine environment in this area is strongly influenced by the major equatorial current systems, particularly the westward-flowing South Equatorial Current (SECN) and the eastward-flowing equatorial undercurrent. The equatorial upwelling, a result of the interaction of the equatorial current and easterly trade winds, frequently occurs in the vicinity of the Gilbert Islands. The upwelling brings to the surface nutrient-rich water, which provides suitable conditions for high primary and secondary production. These conditions are thought to provide the forage base for the large stocks of tuna that occur throughout the western tropical Pacific.

Currents in the vicinity of the Kiribati Archipelago are highly variable in direction and rate, but are generally weak (~25 cm sec<sup>-1</sup> or 0.5 knots). The westward flowing northern branch of the SECN is the strongest current in the south Pacific, and mainly affects the Line Islands and Phoenix fishing zones north of 7°S from January to June. The westward flowing southern branch of the South Equatorial Current (SECS) is evident to the north of 20°S in each month and appears strongest from May to October. The South Equatorial Countercurrent (SECC) shares a northern boundary with the SECN and a southern boundary with the SECS. The SECC is evident to the south of 10°S during November to April.

The subsurface thermal structure of the Line Islands and Phoenix fishing areas indicates that long line catchability may vary across the area. From 5° to 15°S, the 15°C isotherm is within 220m of the surface and the thermo-cline gradient is strong. At these lower latitudes there is less oxygen at a given depth than southern latitude, with yellowfin and bigeye catchability greater compared to southern areas, due mainly to a shallower and steeper thermocline and

low oxygen concentrations at depth. Sub-surface isotherms were ~50-100m shallower after the strong ENSO event in 1982. However, recent ENSO or La Niña events did not alter the subsurface thermal structure (or the data were possibly inadequate for the detection of such changes). The primary and secondary productivity within oceanic waters near the Kiribati Archipelago are relatively low compared to high islands within the south Pacific.

### **B.1.2 Legal Extent and Characteristics of the EEZ**

The Marine Zones (Declaration) Act 1983 (Act No. 7 of 1983) defines and establishes the territorial seas,<sup>8</sup> the archipelagic waters and an economic exclusive zone. In accordance with rules of international law, the extent of territorial seas and of the exclusive economic zone must not exceed 12 and 200 nautical miles respectively. The normal baseline for measuring the breadth of the territorial sea is the low-water line. However, straight baselines can be drawn to establish the outer limits of archipelagic waters. Where archipelagic waters baselines have been established, the breadth of the territorial sea and the EEZ should be measured from such baselines. To date, no declaration of archipelagic baselines has been made, although this is in process. The Republic of Kiribati exercises full sovereignty over its internal waters and territorial seas, including their seabed and subsoil and the airspace over them. It should be noted that legislators failed to assert Kiribati's sovereignty over the archipelagic waters.<sup>9</sup>

Within the exclusive economic zone, the Republic of Kiribati has sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non living, of the seabed and the subsoil, and the water column. The Marine Zones (Declaration) Act 1983 recognizes the right of innocent passage through and over the territorial seas and archipelagic waters of Kiribati.<sup>10</sup>

Although reference to the continental shelf is made in section 7(6) of the Marine Zones (Declaration) Act 1983, this Act does not contain any provision establishing the rights of the Republic Kiribati over the continental shelf nor any provision determining the rules to be applied to delimit the extent of the continental shelf.

The Republic of Kiribati has maritime boundaries with Nauru, Marshall Islands, the United States of America (in respect of Jarvis Island, Kingman Reef, Palmyra Atoll and Howland and Baker Islands), New Zealand (in respect of Tokelau), Tuvalu, France (in respect of French Polynesia) and Cook Islands. There are maritime boundary agreements with French Polynesia and negotiations are in progress with Tokelau. The Marine Zones (Declaration) Act 1983 provides that in areas where the EEZ cannot be extended to 200 nautical miles, the median line should be applied.

Kiribati has three EEZs, formed by Banaba and the Gilbert group to the west, the Phoenix group in the centre, and the vast spread of the Line Islands to the east and southeast (see figure 3). The total sea area enclosed is 3.5 million square kilometres (km<sup>2</sup>), second in size in

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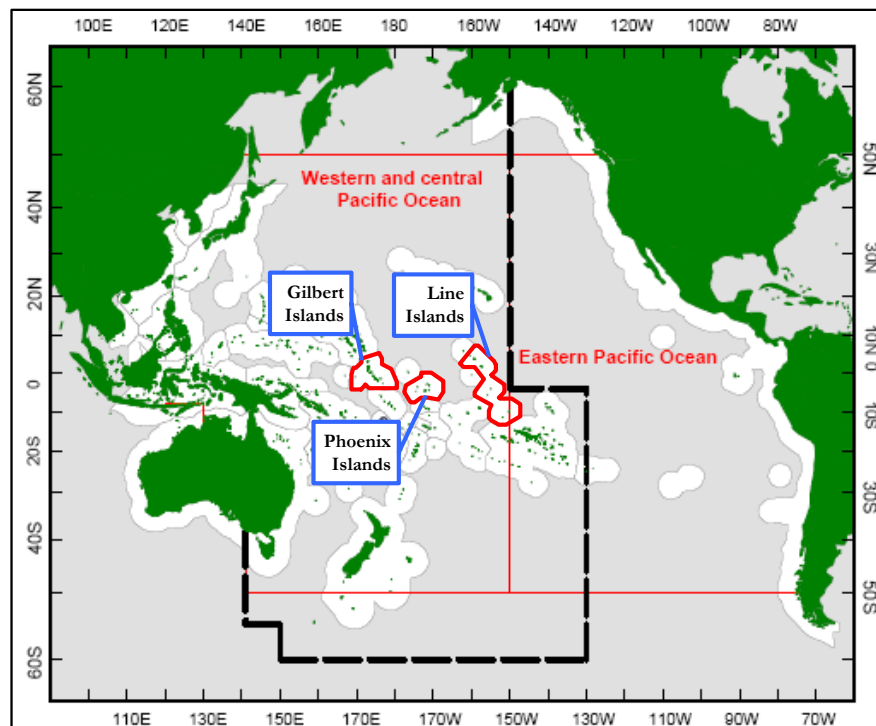
<sup>8</sup> Plural is used here to reflect the fact that Kiribati is made up of several groups of islands and that therefore more than one territorial sea may be established.

<sup>9</sup> Article 49 of the LOSC stipulates that "this sovereignty extends to the air space over the archipelagic waters, as well as to their bed and subsoil, and the resources contained therein".

<sup>10</sup> Note that legislators have incorrectly made reference to "the right of free passage" rather than "the right of innocent passage" in section 9(1) of the Marine Zones (Declaration) Act 1983.

the Pacific only to that of French Polynesia. The three zones, with “high seas” areas dividing them, sprawl 5,000 km from east to west along and south of the equator. The FFA believes that in 2006 efforts will be made to “fill in the gaps” between the national EEZs. It is not known if the Kiribati EEZ will be affected.

**Figure 3: The EEZs of Kiribati**



## B.2 ANALYSIS OF FISHERY RESOURCES AND ACTIVITIES

### B.2.1 Marine Resources

As discussed above, the three Kiribati EEZ areas lie across the equator, with the Line Islands group stretching to around 15°S, providing a typically tropical oceanic environment, sparsely interspersed with coral-tipped seamounts. This provides the two main resource types within the EEZ:

- Coastal resources, which include many groups of fish and invertebrates, such as finfish (scarids, lethrinids, lutjanids, and carangids), beche de mer, trochus, giant clam, lobster, and turbo. They are characterised by their shallow water habitats or demersal life-styles. Because of their relative accessibility, these resources form the basis of most of the small-scale fisheries in Kiribati.
- Oceanic resources, which include tunas, billfish and allied species. They are characterised by an open-water pelagic habitat, potentially extensive movements of individuals, and wide larval dispersal. These resources form the basis of the industrial fisheries of Kiribati and its foreign partners.

Kiribati fall within the 20°C isotherm that defines the limits of tropical waters suitable for coral reef development. Kiribati's Line Islands group probably serve as a source for much of the coral reef biota of the eastern Pacific (UNEP/IUCN 1988 referred by Bleakley 1995). Kiribati's coastal and marine habitats harbour many species of finfish and non-fish resources of commercial interest, including lobster, deep-water shrimp, giant clam, ark shell, pearl oyster and beche-de-mer. In general, however, these inshore resources are limited

because of the small area of land, reef and lagoon, and would not be able to support large fisheries. Deep slope bottom-fish resources, for example, have been estimated as capable of a sustaining a yield of between 73 and 219 mt/year (FAO Country Profile). In addition, high levels of exploitation near population centres are already occurring in some cases. Potential for development of inshore resources is thus limited, although certain aquaculture ventures may possibly have long-term potential.

Kiribati's oceanic resources are much wider ranging, mainly consisting of larger pelagics such as skipjack (*Katsuwonus pelamis*), yellowfin (*Thunnus albacares*) and bigeye (*Thunnus obesus*) tunas. The skipjack tuna is found throughout the central Pacific, with the warm, poleward-flowing currents near northern Japan and southern Australia extend their distribution to 40°N and 40°S. Yellowfin and bigeye tuna are distributed throughout the tropical and sub-tropical waters of the Pacific Ocean, although there is some indication of restricted mixing of yellowfin tuna between the western and eastern Pacific based on analysis of genetic samples (Hampton *et al*, 2005). The more temperate species of tuna such as albacore (*Thunnus alalunga*) are mainly found below 10°S but can be found in Kiribati waters when at the extreme northern edge of their migration each May to October.

Swordfish (*Xiphias gladius*) are present in Kiribati, but again in low numbers. These fish are part of the SW Pacific stock that overlap the temperate tunas to the south and tropical tunas to the north that provide the mainstay of Kiribati's fisheries. These fish spawn off the NE coast of Australia and then forage over a much wider area. There may be a tropical spawning area in the East Pacific, but this has not yet been confirmed or ruled out (Kolody *et al*, 2005).

Other pelagic teleost species found in the tropical waters of the Western Central Pacific include great barracuda (*Sphyraena jello*), mahi mahi (*Coryphaena hippurus*), pomfrets (Bramidae) and snake mackerels (Gempylidae). There are also a number of sharks and rays, including the blue shark (*Prionace glauca*), mako sharks (*Isurus* spp.), the oceanic whitetip shark (*Carcharhinus longimanus*), the silky shark (*Carcharhinus falciformis*) and thresher sharks (*Alopias* spp) as well as the pelagic stingray (*Dasyatis violacea*).

Over half the world's known species of whales are found in the region. Species include the Blue, Fin, Sei, Humpback, Minke, Bryde's and Sperm whales. Dolphin species found in the region includes Risso's dolphin, bottlenose dolphin, Indo-Pacific humpbacked dolphin, striped dolphin, pan-tropical spotted dolphin, spinner dolphin, Frazer's dolphin, and Irrawaddy dolphins. The dugong is found in the region in the waters of Australia, Papua New Guinea, Solomon Islands, Vanuatu, New Caledonia and Palau.

The Pacific area supports the world's largest remaining populations of green, hawksbill and loggerhead turtles. There are six marine turtle species that feed and migrate through the Pacific waters, of which five species are known to frequent Kiribati waters. These are: the leatherback (*Dermochelys coriacea*), loggerhead (*Caretta caretta*), olive ridley (*Lepidochelys olivacea*, also known as the Pacific ridley), green (*Chelonia mydas*), and hawksbill (*Eretmochelys imbricata*) turtles (Kiribati Report to UNCED, 1992).

## **B.3 FLEET STRUCTURE AND ACTIVITIES**

### **B.3.1 Artisanal Fleet**

Looking at the whole islands in the Gilbert group about 78.4% of all the households are engaged in some form of fishing activity. Out of this proportion 14% are estimated to be full time, fishing household who derive their main source of income from fishing, 19% part time, fishing household who sometimes fish when there is a need for cash, and 67% comprise the subsistence-fishing households.

Since the introduction of motorised fishing boats and their increase in numbers through the years, the fishermen have ventured to more and more distant fishing grounds. Inter-island travelling with small outboard-powered canoes and skiffs has also been increasing over recent years. Small-scale commercial fishing is concentrated around Tarawa where market conditions are better than in other parts of the country. For South Tarawa alone, in 2003, there were 729 operational engines. It is estimated that there are over 200 troll boats presently active on Tarawa which employ 300 fishermen full time and 300 fishermen part time.

A prevailing issue is that most artisanal vessels measure less than 7 m. which falls below the threshold for health and safety requirements.

### **B.3.2 Industrial Fleet**

The single Kiribati purse seiner (the KAO 1), is operated under a joint venture by Othoshiro Fishing Company of Japan and the Government of Kiribati). Discussions with the Central Pacific Producers Limited (CPPL) indicated that the company was reviewing the potential to acquire two further purse seiners, probably through a joint venture.

Kiribati has had 1-2 long liners based in the Archipelago since 1995 (Awira, 2004). In 2005, 4 small long liners were provided for Kiribati by the Japanese government as part of the agreement to develop fish processing facilities on Kiritimati.

### **B.3.3 The Foreign Fishing Fleet**

#### **B.3.3.1 Introduction**

Tuna fleets operating within the FFA region include: Purse seine fleets from the US, Japan, Korea, Taiwan, the Pacific Island Countries (PICs), Spain and other nationalities; the pole and line fleet from PICs and the southern Pacific Ocean Japanese pole and line fleet;<sup>11</sup> Frozen long line fleets from Japan, Korea and Taiwan; and Fresh long line fleets from Japan, China, Taiwan and PICs.

While MFMRD were unwilling to divulge the number of foreign fishing vessels licensed to fish in Kiribati waters, data that was provided (table 10) shows 283 vessels in 2005, down by 28 per cent from 2002. Whereas there are discrepancies in the numbers provided, the 2002 Annual Report noted that licenses were issued to 225 long liners, 167 purse seiners, 1 purser / liner and 9 bunker ships.

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<sup>11</sup> The pole and line fleet from Japan is subdivided within the model into two fleets, a “northern” Pacific Ocean fleet and a “southern” Pacific Ocean fleet.

### B.3.3.2 Legal Basis for Foreign Vessel Activities in the Kiribati EEZ

As a member to the South Pacific Forum Fisheries Agency (FFA), Kiribati is required to apply the harmonised minimum terms and conditions for foreign fishing vessel access (Harmonised MTCs) developed by FFA to its fishing zone. Main features of the MTCs<sup>12</sup> are summarized in table 11.

**Table 10: Number of Vessels Licensed to Fish in the I-Kiribati EEZ**

Year	Number of Vessels
2002	394
2003	350
2004	356
2005	283

Source: MFMRD

**Table 11: MTC: Main Features**

1 – Common regional licence form - Foreign fishing vessels shall not fish in the zone of any member country unless licensed to fish in the form attached to the MTCs and such licence or a duly certified copy, facsimile or telex confirmation thereof shall be carried on board at all times.	
2 - Good standing on the regional register of foreign fishing vessels - No foreign fishing vessel shall be issued with a fishing licence unless that vessel and its operator have good standing on the Regional Register of Foreign Fishing Vessels.	
3 - Control and monitoring of transhipment - The operator of a foreign fishing vessel shall:	
(i)	not tranship at sea under any circumstances except for the transfer of catch by a licensed group seiner to its licensed carrier vessel which is in good standing on the Regional Register;
(ii)	provide 72 hours notice to a licensing country of a request to tranship any or all of the fish on board and shall provide the name of the vessel, its international radio call sign, its position, the catch on board by species, the time and port where such transshipment is requested to occur, and an undertaking to pay all fees required under the laws of the licensing country;
(iii)	only tranship at the time, port, and approved designated areas authorised for transshipment by the licensing country;
(iv)	submit full reports on transhipping on the prescribed forms;
(v)	allow and assist any person identified as an officer of the licensing country full access to and use of facilities and equipment which the officer may determine is necessary to carry out his or her duties; have full access to the bridge, fish on board and areas which may be used to hold, process, weigh and store fish; remove samples; have full access to the vessel's records, including its log and documentation for the purpose of inspection and photocopying; and gather any other information required to fully monitor the activity;
(vi)	shall not assault, obstruct, resist, delay, refuse boarding to, intimidate or interfere with any such officer in the performance of his or her duties; and
(vii)	shall pay all fees required under the laws of the licensing country.
4 – Maintenance and submission of catch logs in zones and on high sea areas – The operator shall:	
(a)	duly complete in the English language, daily reports in the prescribed form of all catch and by-catch by species taken in the fishery waters of the licensing country including the high seas and shall certify that such information is true, complete and accurate;
(b)	ensure that accurate records are maintained and submitted to the licensing country of all catch discarded at sea and all by-catch transhipped or unloaded offshore;
(c)	provide to the licensing country or its representative on the prescribed forms – (i) a preliminary report within

<sup>12</sup> Based on MTCs as amended by FFC56 (24-28 May 2004).

14 days of the completion of a trip; and (ii) a final report within 45 days of the completion of a trip.

#### 5 – Vessel reporting requirements

(a) The operator of a foreign fishing vessel shall provide to the licensing country or its representative information relating to the position of, and catch on board, the vessel in the manner notified by a licensing country as follows: (i) each Wednesday; (ii) within a reasonable time of entry into and departure from the zone of any licensing country as determined by the licensing country; (iii) within a reasonable time prior to the estimated time of entry into any port of a licensing country as determined by the licensing country; and

(b) The operator of a foreign fishing vessel shall also provide, after each fishing trip, landing and out-turn documentation, and landing and dock receipts to the licensing country or its representative.

#### 6 – Observers

(a) The operator and each member of the crew of a vessel shall allow and assist any person identified by a country as an observer to:

(i) board the vessel for scientific, compliance, monitoring and other functions;

(ii) embark at a place and time agreed to;

(iii) have full access to and use of all facilities and equipment on board which the observer may determine is necessary to carry out his or her duties;

(iv) disembark at an agreed place and time; and

(v) carry out all duties safely.

(b) The operator or any crew member of the vessel shall not assault, obstruct, resist, delay, refuse boarding to, intimidate or interfere with an observer in the performance of his or her duties.

(c) The operator shall provide the observer, while on board the vessel, at no expense to the licensing country, with officer level accommodation, food and medical facilities.

(d) The following costs of the observer shall be met by the operator –

(i) full travel costs from the licensing country to and from the vessel;

(ii) salary;

(iii) full insurance coverage for the observer;

(iv) all other costs associated with observers performing his duties as an observer.

#### 7 – Appointment of an agent

(a) *The flag State government and/or fishermen's association and/or vessel operator shall nominate, appoint and maintain an agent who shall be resident in a licensing country and who shall have authority to receive and respond to any legal process and shall notify the licensing country of the name and address of such agent.*

(b) Any communication, information, document, direction, request or response to or from that agent shall be deemed to have been sent to, or received from the flag State government and/or fishermen's association and/or vessel operator.

#### 8 – Foreign fishing vessels in transit

*Foreign fishing vessels navigating through ("transiting") the fisheries zone shall be required to have all fishing equipment on board stowed or secured in such a manner that it is not readily available to use for fishing.*

#### 9 – Application of MTCs in port

Member countries shall take measures through legislation or regulations and in accordance with international law to exercise powers of port State over fishing vessels in their ports, whether or not they are authorised to fish in those countries' EEZs. Such measures shall include the power to board fishing vessels and inspect their documentation, and carry out such other measures necessary for the conservation and management of fish stocks.

#### 10 – Enforcement

(a) a vessel operator and each member of the crew shall, while in any zone of a member country, immediately comply with every instruction and direction given by an authorized and identified officer including to stop, move to a specified location and to facilitate safe boarding and inspection of the vessel, its licence, gear, equipment, records, facilities, fish and fish products;

(b) the vessel operator and each member of the crew shall facilitate and assist in any action by an authorised officer of a country and shall not assault, obstruct, resist, delay, refuse boarding to, intimidate or interfere with an authorised officer in the performance of his or her duties;

(c) an authorized officer shall conduct each boarding and inspection as much as possible in a manner so as not to interfere unduly with the lawful operation of the vessels;

(d) for fisheries surveillance and marine safety purposes, every vessel shall be marked and identified in accordance with the FAO approved Standard Specifications for the Marking and Identification of Fishing Vessels.

#### 11 – Vessel Monitoring system

(a) The operator of a foreign fishing vessel shall apply for registration of the automatic location communicator (ALC) on the prescribed form for each year and pay the prescribed fee; install and operate a registered ALC on board the vessel; and maintain the ALC in good working order.

(b) The operator of a foreign fishing vessel shall not interfere with, tamper with, alter, damage or disable the ALC; move or remove the ALC from the agreed installed position without the prior permission of the licensing country; or impede the operation of the ALC.

(c) At least [*to be determined by the licensing country*] hours prior to entry into the exclusive economic zone of [*insert name of the licensing country*] the operator of a foreign fishing vessel shall ensure that the ALC is switched on and is operating properly at all times when the vessel is in the exclusive economic zone of [*insert name of licensing country*].

(d) The operator of a foreign fishing vessel or his or her authorized agent, upon notification by the [*insert name of licensing country, appropriate authority*] that the vessel's ALC has failed to transmit, shall ensure that position reports are communicated to [*insert name of authority delegated by the licensing country/appropriate authority*].

(e) If it is not possible to make position reports, or if the [*insert name of authority delegated by licensing country/appropriate authority*] directs, the master of the vessel must immediately stow the fishing gear and take the vessel directly to a port.

#### 12 – Identification of fish aggregating devices

The operator of a foreign fishing vessel shall ensure that any fish aggregating device or devices (FAD) used by its vessel are clearly marked and identified, and that information about such marking and identification mark(s), and the area where the FAD is deployed is provided to the licensing country.

#### 13 – Pre-fishing inspections

Foreign fishing vessels shall not be issued with a fishing licence unless compulsory pre-fishing inspections are carried out by the licensing country for purpose of:

- (a) verifying the catch on board the vessel; and
- (b) ensuring that the vessel complies with accepted international pre-fishing practices.

**Table 12: The Purse Seiner Fleet in the WCPO**

	1988	1995	2002 <sup>13</sup>	2003	Change Since 1988
Japan <sup>14</sup>	34+5	33	35	34 (1)	-5
USA	32	43	29	20 (6)	- 12
Korea	23	30	28	27	+4
Taiwan <sup>3</sup>	16+2	42	41	38	+ 20
China	0	0	3	4	+ 4
Solomons	4	3	2	1 (1)	-3
PNG	0	3	6	7	+7
FSM	0	5	7	9	+9
Marshalls	0	0	5	6	+6
Kiribati	0	1	1	1	+1
Vanuatu	0	2	11	15 (3)	+15
NZ DW	0	0	4	4	+4
Australia DW	3	0	0	0	-3
Spain <sup>15</sup>	0	0	1 (9)	1 (7)	+1

<sup>13</sup> Although this report focuses on three time periods (1988, 1996, 2003), the year 2002 is included in the fleet tables as that is the latest year for which catch data are available.

<sup>14</sup> The seven Japan and Taiwan vessels following plus signs in 1988 are group seining operations.

	1988	1995	2002 <sup>13</sup>	2003	Change Since 1988
Neth. Antilles	0	0	1	1	+1
Panama	0	0	0	1	+1
USSR	5	0	0	0	-5
Philippines DW	9	13	23	22	+12
Indonesia DW	3	0	0	0	-3
TOTAL	136	175	197	191	+55

Note: Bracketed numbers indicate the number of additional vessels which are on the Regional Register but are not currently licensed to fish under access arrangements; these are not included in the total number of active vessels

Source: Gillett and Lewis

### B.3.3.3 Purse Seiners

As can be seen from Table 12, in 2003 the purse seiner fleet operating in the WCPO numbered 191. The largest national fleets are those of the Taiwan, Japan, Korea and the USA. The number of Pacific-island domestic vessels continued to grow in 2004. This category is made up of vessels fishing under the FSM Arrangement (see below) and domestically-based purse seine vessels operating in PNG and Solomon Islands waters. The FSM Arrangement fleet comprises vessels managed by the Pacific Island “Home Parties” of Kiribati (1 vessel), PNG (17 vessels), the Marshall Islands (6 vessels), FSM (6 vessels) and the Solomon Islands (2 vessels) which fish over a broad area of the tropical WCPO.

### B.3.3.4 Long Liners

The fishery involves two main types of operation:

- Large (typically >250 GRT) distant-water freezer vessels which undertake long voyages (months) and operate over large areas of the region targeting yellowfin and bigeye tuna;
- Smaller (typically <100 GRT) domestically-based vessels, with ice or chill capacity, and serving fresh or air-freight sashimi markets. These vessels operate mostly in tropical areas.

There have been significant changes in fleet operations during the past two decades. For example, a feature of the 1980s was an increase in depth deployment of the long line gear to target higher-valued bigeye in preference to yellowfin. During the 1990s, there was a gradual increase in the number of Pacific-Islands domestic vessels, such as those from American Samoa, Cook Islands, Fiji, French Polynesia, New Caledonia, Samoa, Solomon Islands and Tonga; these fleets mainly operate in subtropical waters, with albacore the main species taken. There has also been a trend towards flexibility in species targeting in some fleets, notably those with ultra-low temperature freezing capacity – for example, some vessels in the distant-water Taiwanese fleet have recently switched from albacore targeting in the South Pacific to targeting bigeye and yellowfin in the eastern regions of the tropical WCPO.

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<sup>15</sup> Includes the Spanish-owned vessels flagged in El Salvador and Guatemala.

## B.4 CATCHES AND LANDINGS

### B.4.1 Artisanal Fleet

Landings from the artisanal fleet are not known. However, on the basis of net consumption figures (i.e. based upon import and export trade flows) approaching 100 kg. per year, the catch can reasonably be estimated at between 8,000 t. and 10,000 t.

### B.4.2 Industrial Fleet

The annual catch of KAO 1 is between 4,000 t. and 5,000 t. (see figure 9 on page 42). Most of this catch is from outside I-Kiribati waters. Production is landed in the Solomon Islands and PNG for canning.

Catches of the I-Kiribati long liners have been very low – in last active year of 2003 only 8 t fish was caught, consisting of 2 t yellow fin, 1 t bigeye and 5t other species.

### B.4.3 The Foreign Fishing Fleet

#### B.4.3.1 Purse Seiners

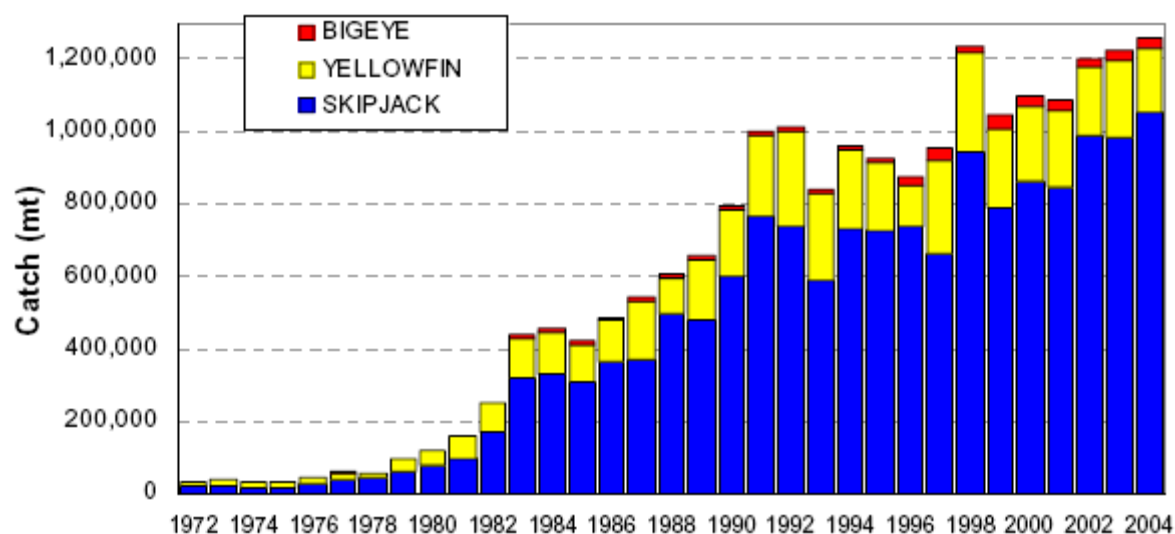
##### B.4.3.1.1 West Central Pacific

Total Catch: the purse seine fishery has accounted for between 55% and 60% of the WCP–CA total catch by volume since the early 1990s, with annual catches in the range of 790,000 t. to 1,260,000 t. The majority of the WCP–CA purse seine catch is taken by the four main DWFN fleets – Japan, Korea, Taiwan and USA. There has, however, been an increasing contribution from the growing number of Pacific Islands fleets, with balance from the Philippines and a variety of other fleets, including several new distant-water entrants into the tropical fishery (e.g. China and New Zealand).

Unlike those of other ocean areas, the WCP purse-seine fishery is essentially a skipjack fishery, with that species regularly accounting for 70% to 75% of the purse seine catch. Yellowfin accounts for 20% to 25% while bigeye accounts for only a small proportion (Figure 4). Features of the purse seine catch by species during the past decade include the following.

Annual skipjack catches fluctuating between 600,000 t. and 700,000 t. prior to 1998. Catches increased in 1998 and were maintained above 800,000 t. in all subsequent years.

**Figure 4: Purse Seine Catches in the Western Central Pacific 1972 - 2004**



Source: Williams and Reid, 2005

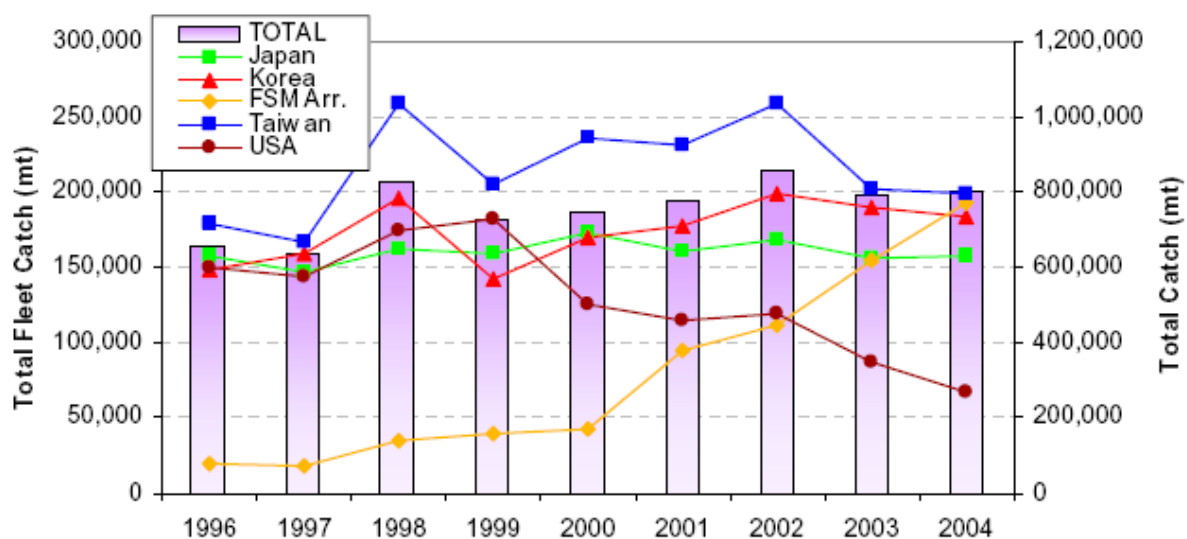
Annual yellowfin catches fluctuating considerably between 120,000 t. and 270,000 t. The proportion of yellowfin in the catch is generally higher during El Niño years and lower during La Niña years.

Increased bigeye tuna purse seine catches, first in 1997 (33,458 t.) and then again in 1999 (38,327 t.) were due to increased use of drifting Fish Aggregating Devices (FADs) since 1996. In recent years, there has been a gradual decline in both the use of drifting FADs and the catch of bigeye.

The 2004 purse-seine catch of 1,263,161 t was the highest on record, following catches in excess of 1,200,000 t. in the previous two years. The skipjack part of the catch in 2004 (1,059,061 t – 84%) was also the highest on record, although the yellowfin catch for that year (179,310 t. – 14%) was the lowest since 1996. The estimated purse seine bigeye catch for 2004 (24,790 t. – 2%) continues the declining trend in catches since the record 1999 catch (38,327 t.), primarily due, as stated, to the gradual reduction in fishing effort on drifting FADs over recent years.

Taiwan has been the highest producer in the tropical purse seine fishery since 1996 (figure 5). The 2004 provisional catch estimate (198,240 t.) for this fleet was similar to the level taken in 2003, but 150,000 t. less than 2002, mainly due to several vessels changing flag. Catches by the Japanese and Korean purse seine fleets have been stable over recent years.

**Figure 5: Trends in annual catches for the top five purse seine fleets operating in the tropical WCP, 1996–2004.**

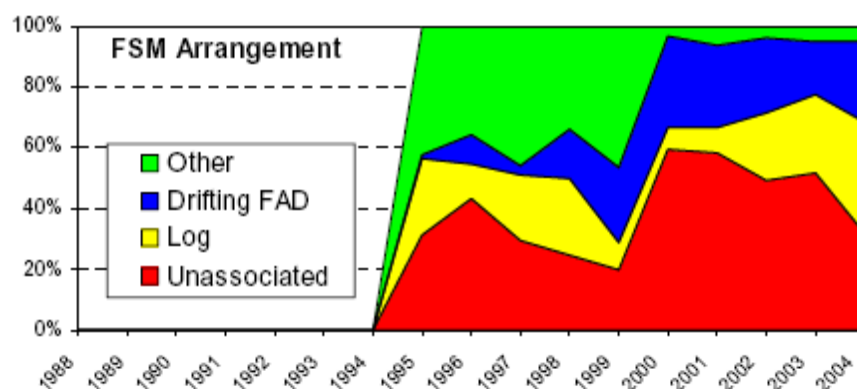


Source: Williams and Reid, 2005

The increase in annual catch by the FSM Arrangement fleet since 2000 corresponds to the increase in vessel numbers, and mirrors the decline in US purse seine catch and vessel numbers over this period.

The Korean fleet continued to concentrate on unassociated, free-swimming schools in 2004 (60% of all sets by this fleet). In contrast, log sets were the most predominant set type used by the Japanese, FSM Arrangement (figure 6) and Taiwan fleets during 2004, and drifting FAD sets for the US purse seine fleet. During 2004, the total number of 5 associated sets (log and FAD sets) in the WCP–CA purse seine fishery exceeded the number of unassociated sets for the first time since 1999. The increase in associated sets is typical of El Niño years, when natural floating objects (i.e. logs) are more prevalent and tuna schools associated to floating objects appear to be more available to the purse seine gear.

**Figure 6: Time series showing the percentage of total sets by school type for the ‘FSM Arrangement’ purse-seine fleet operating in the WCP**

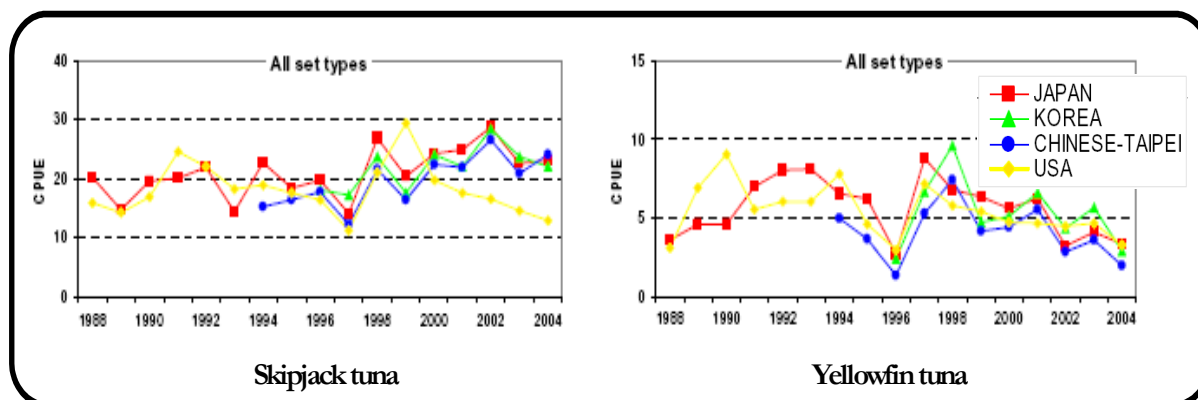


Source: Williams and Reid, 2005

Catch Distribution: catch distribution in tropical areas of the WCP is strongly influenced by ENSO events. A further analysis is conducted of the spatial distribution of fishing catches with respect to the Kiribati EEZ in the next section.

Catch per Unit Effort: the 2004 skipjack CPUE for *unassociated sets* for all of the major fleets was clearly lower than in recent years (figure 7). In contrast, the skipjack catch per unit effort (CPUE) for *associated sets* for most fleets increased in 2004, and skipjack CPUE for all set types was therefore similar to the level in 2003. The exception was the US fleet, which experienced very low skipjack CPUE for drifting FAD sets, contributing to a drop in the overall skipjack CPUE for 2004.

**Figure 7: Purse seine CPUEs (all set types) for skipjack and yellowfin tuna, 1988-2004**



Source: Williams and Reid, 2005

Associated (log and drifting FAD) sets generally produce higher catch rates (t/day) for skipjack than unassociated sets, yet unassociated sets produce a higher catch rates for yellowfin than associated sets. This is mainly due to unassociated sets taking large, adult yellowfin, which account for a larger catch (by weight) than the mostly juvenile yellowfin encountered in associated sets.

**B.4.3.1.2 Kiribati EEZ**

While decreasing, USA vessels consistently have the highest catches by purse seiners in Kiribati waters (29% over 1999 – 2004, 40% in 2004), catching 19,299 t of the total 47,795 t 2004 (table 13). Japan also catches a significant proportion (20% over 1999 – 2004, 9% in 2004), as does Korea (19% over 1999 – 2004, 2% in 2004) and Taiwan (17% over 1999 – 2004, 36% in 2004). Spain caught 625 t in 2004 and a little less in 2005, while SPC quotes Spanish catch estimates for the whole of WCPO (taken from Instituto Español de Oceanografía) as 5,517 t.

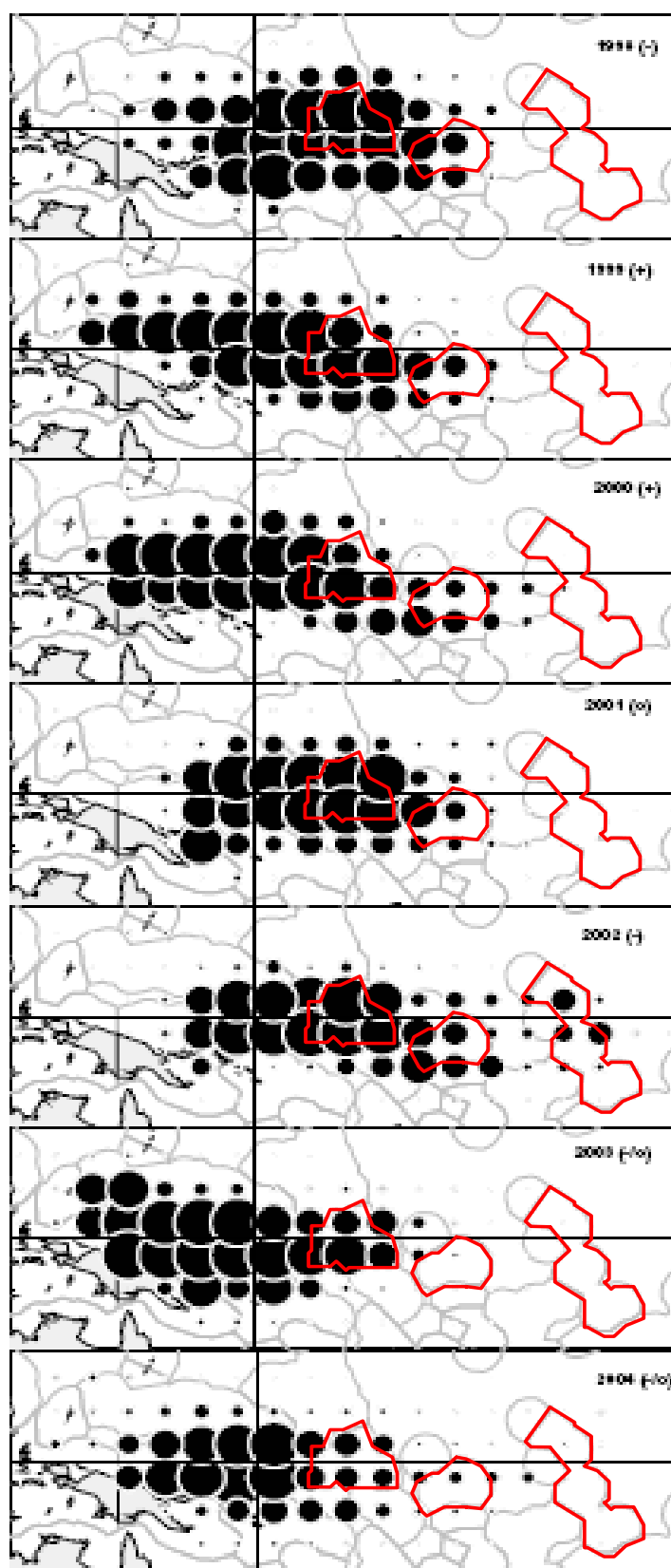
The main species caught by purse seiners in the Kiribati EEZ are skipjack (on average 79% over 1999 – 2004) and yellowfin (20%) with a little bigeye (1%). The US catch has declined from 63,096 t in 1999 to 19,299 t in 2004 and consists mainly of skipjack (75% in 2004).

Fishing activities mainly take place in the southern portion of the Gilbert Island group (89%), with the remainder in the Phoenix Island group (9%) and Line Islands (8%) (figure 8). The Japanese fleet tends to operate further to the west (i.e. FSM) and only just overlap with the western-most Gilbert Island group EEZ. Again, the catch consists mostly of skipjack (83% in 2004). Korean and Taiwanese catches are also mainly found to the west of Kiribati waters, with effort taking place within the western fringe of the Gilbert Island group.

**Table 13: Purse Seine catches in the Kiribati EEZs (1999 - 2004)**

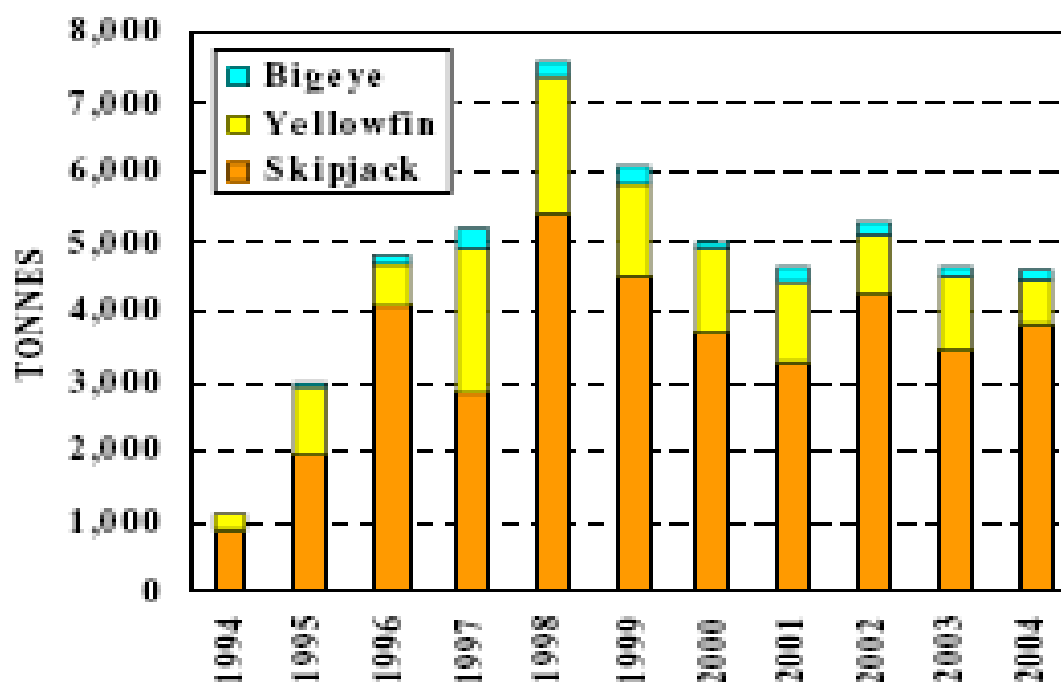
Country	Species	1999		2000		2001		2002		2003		2004	
China	Skipjack	0	0%	0	0%	0	0%	3,395	92%	0	0%	0	0%
	Yellowfin	0	0%	0	0%	0	0%	314	8%	0	0%	0	0%
	Bigeye	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
	<b>Sub-total</b>	<b>0</b>	<b>0%</b>	<b>0</b>	<b>0%</b>	<b>0</b>	<b>0%</b>	<b>3,709</b>	<b>100%</b>	<b>0</b>	<b>0%</b>	<b>0</b>	<b>0%</b>
New Zealand	Skipjack	0	0%	0	0%	1,605	64%	4,512	77%	2,767	80%	3,950	81%
	Yellowfin	0	0%	0	0%	904	36%	1,351	23%	699	20%	869	18%
	Bigeye	0	0%	0	0%	0	0%	0	0%	0	0%	50	1%
	<b>Sub-total</b>	<b>0</b>	<b>0%</b>	<b>0</b>	<b>0%</b>	<b>2,509</b>	<b>100%</b>	<b>5,863</b>	<b>100%</b>	<b>3,466</b>	<b>100%</b>	<b>4,869</b>	<b>100%</b>
FSM	Skipjack	353	54%	3,308	79%	28,123	80%	38,144	90%	19,743	89%	583	85%
	Yellowfin	176	27%	847	20%	6,590	19%	4,030	10%	2,472	11%	93	13%
	Bigeye	130	20%	27	1%	260	1%	0	0%	73	0%	13	2%
	<b>Sub-total</b>	<b>659</b>	<b>100%</b>	<b>4,182</b>	<b>100%</b>	<b>34,973</b>	<b>100%</b>	<b>42,174</b>	<b>100%</b>	<b>22,288</b>	<b>100%</b>	<b>689</b>	<b>100%</b>
USA	Skipjack	47,482	75%	27,672	57%	36,316	76%	29,667	72%	17,072	87%	14,512	75%
	Yellowfin	14,462	23%	20,510	42%	11,379	24%	11,505	28%	2,232	11%	4,642	24%
	Bigeye	1,152	2%	386	1%	214	0%	26	0%	274	1%	145	1%
	<b>Sub-total</b>	<b>63,096</b>	<b>100%</b>	<b>48,568</b>	<b>100%</b>	<b>47,909</b>	<b>100%</b>	<b>41,198</b>	<b>100%</b>	<b>19,578</b>	<b>100%</b>	<b>19,299</b>	<b>100%</b>
Philippines	Skipjack	0	0%	0	0%	0	0%	1,293	81%	0	0%	0	0%
	Yellowfin	0	0%	0	0%	0	0%	280	18%	0	0%	0	0%
	Bigeye	0	0%	0	0%	0	0%	15	1%	0	0%	0	0%
	<b>Sub-total</b>	<b>0</b>	<b>0%</b>	<b>0</b>	<b>0%</b>	<b>0</b>	<b>0%</b>	<b>1,588</b>	<b>100%</b>	<b>0</b>	<b>0%</b>	<b>0</b>	<b>0%</b>
Spain	Skipjack	0	0%	0	0%	0	0%	105	59%	0	0%	519	83%
	Yellowfin	0	0%	0	0%	0	0%	51	29%	0	0%	93	15%
	Bigeye	0	0%	0	0%	0	0%	21	12%	0	0%	13	2%
	<b>Sub-total</b>	<b>0</b>	<b>0%</b>	<b>0</b>	<b>0%</b>	<b>0</b>	<b>0%</b>	<b>177</b>	<b>100%</b>	<b>0</b>	<b>0%</b>	<b>625</b>	<b>100%</b>
Japan	Skipjack	14,137	66%	23,629	79%	34,799	71%	43,423	92%	8,372	72%	3,457	83%
	Yellowfin	6,588	31%	5,854	19%	12,957	26%	3,016	6%	2,713	23%	567	14%
	Bigeye	646	3%	614	2%	1,322	3%	773	2%	517	4%	145	3%
	<b>Sub-total</b>	<b>21,371</b>	<b>100%</b>	<b>30,097</b>	<b>100%</b>	<b>49,078</b>	<b>100%</b>	<b>47,212</b>	<b>100%</b>	<b>11,602</b>	<b>100%</b>	<b>4,169</b>	<b>100%</b>
Korea	Skipjack	3,435	71%	11,030	79%	49,759	75%	56,795	90%	3,325	78%	565	75%
	Yellowfin	1,401	29%	2,985	21%	16,454	25%	6,311	10%	880	21%	185	25%
	Bigeye	0	0%	0	0%	17	0%	14	0%	40	1%	0	0%
	<b>Sub-total</b>	<b>4,836</b>	<b>100%</b>	<b>14,015</b>	<b>100%</b>	<b>66,230</b>	<b>100%</b>	<b>63,120</b>	<b>100%</b>	<b>4,245</b>	<b>100%</b>	<b>750</b>	<b>100%</b>
Taiwan	Skipjack	10,134	75%	2,500	96%	15,538	70%	56,061	95%	20,531	86%	16,578	95%
	Yellowfin	3,456	25%	95	4%	6,638	30%	2,875	5%	2,826	12%	810	5%
	Bigeye	0	0%	0	0%	65	0%	140	0%	393	2%	6	0%
	<b>Sub-total</b>	<b>13,590</b>	<b>100%</b>	<b>2,595</b>	<b>100%</b>	<b>22,241</b>	<b>100%</b>	<b>59,076</b>	<b>100%</b>	<b>23,750</b>	<b>100%</b>	<b>17,394</b>	<b>100%</b>
<b>TOTAL</b>	Skipjack	75,541	73%	68,139	69%	166,139	75%	233,395	88%	71,810	85%	40,164	84%
	Yellowfin	26,083	25%	30,291	30%	54,922	25%	29,733	11%	11,822	14%	7,259	15%
	Bigeye	1,928	2%	1,027	1%	1,878	1%	989	0%	1,297	2%	372	1%
	<b>TOTAL</b>	<b>103,552</b>	<b>100%</b>	<b>99,457</b>	<b>100%</b>	<b>222,939</b>	<b>100%</b>	<b>264,117</b>	<b>100%</b>	<b>84,929</b>	<b>100%</b>	<b>47,795</b>	<b>100%</b>

Source: Kiribati Tuna Fisheries Report, 2005

**Figure 8: Distribution of purse-seine effort (days fishing – left), 1998–2004.**

ENSO periods are denoted by “+”: La Niña; “-”: El Niño; “--”: strong El Niño; “o”: transitional period.

Source: Williams and Reid, 2005

**Figure 9: Purse seine catch by the KAO 1 (1994 – 2004)**

Source: Riinga, 2005

The Spanish catch has been entirely from the easternmost Line Islands Group over the past four years. Typically, these vessels have fished the high seas in the EPO, but at times have followed the migrations into Kiribati waters. The Marshall Islands and Vanuatu fleets fish throughout the Gilbert Island group EEZ, which forms a major focus of their activities, especially the former. The single Kiribati purse seiner operates throughout the region (figure 9), mainly focusing on FSM, PNG and Solomon Islands waters as well as the Gilbert Island group EEZ.

#### **B.4.3.2 Long Liners**

##### **B.4.3.2.1 Western Central Pacific**

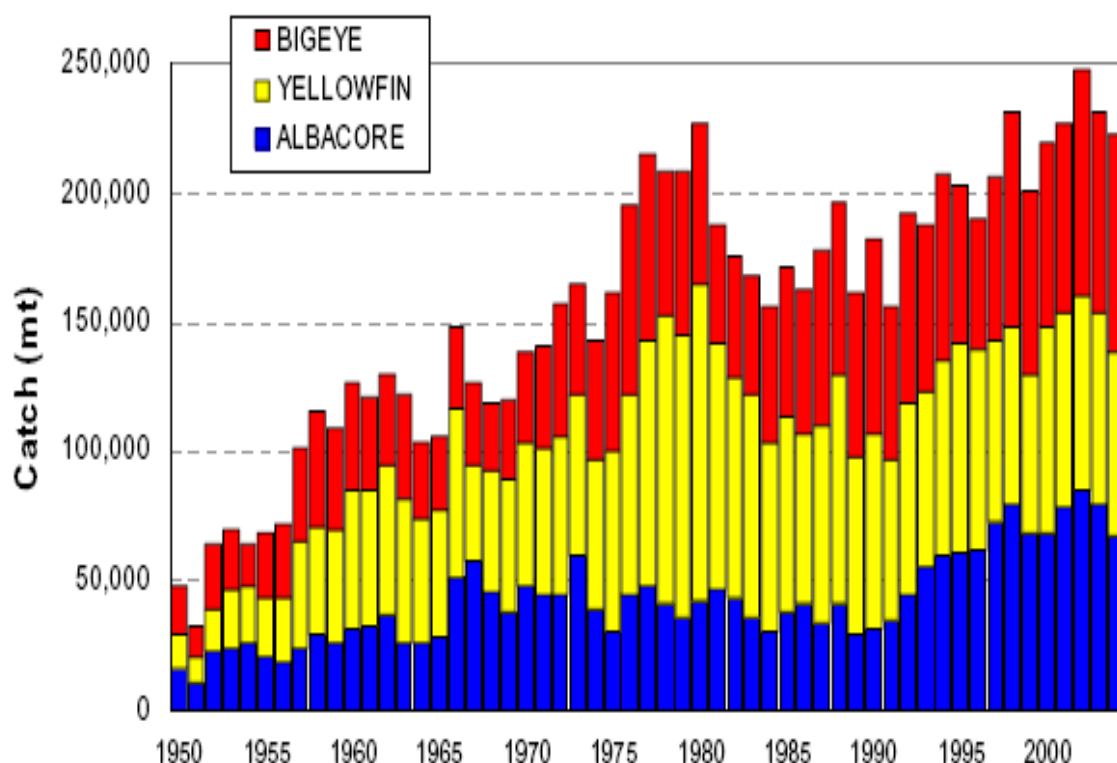
Importance: the long line fishery continues to account for 10% to 12% of the total WCP Convention Area catch (Lawson & Williams, 2005), but rivals the much larger purse seine catch (see below) in landed value. There is a long time series of catch estimates for the WCP, with estimates available since the early 1950s.

Fleet Operations: there have been significant changes in fleet operations during the past two decades. For example, a feature of the 1980s was an increase in depth deployment of the long line gear to target higher-valued bigeye in preference to yellowfin. During the 1990s, there was a gradual increase in the number of Pacific-Islands domestic vessels, such as those from American Samoa, Cook Islands, Fiji, French Polynesia, New Caledonia, Samoa, Solomon Islands and Tonga; these fleets mainly operate in subtropical waters, with albacore the main species taken.

There has also been a trend towards flexibility in species targeting in some fleets, notably those with ultra-low temperature freezing capacity – for example, some vessels in the distant-water Taiwanese fleet have recently switched from albacore targeting in the South Pacific to targeting bigeye and yellowfin in the eastern regions of the tropical WCP.

Catch: the WCP long line tuna catch steadily increased from the early years of the fishery (i.e. the early 1950s) to 1980 (227,212 t), but declined in the five years after this to 156,608 t in 1984 (Figure 10). From 1984, catches steadily increased over the next 15 years, until the late 1990s when levels were similar to 1980. However, the composition of the catch in the late 1970s and early 1980s, a period when yellowfin tuna were targeted (e.g. ALB–19%; BET–27%; YFT–54% in 1980), has since become more balanced, particularly in recent years (e.g. ALB–34%; BET–33%; YFT–32% in 2003).

**Figure 10: Longline Catch in the Western Central Pacific (1950 – 2004)**

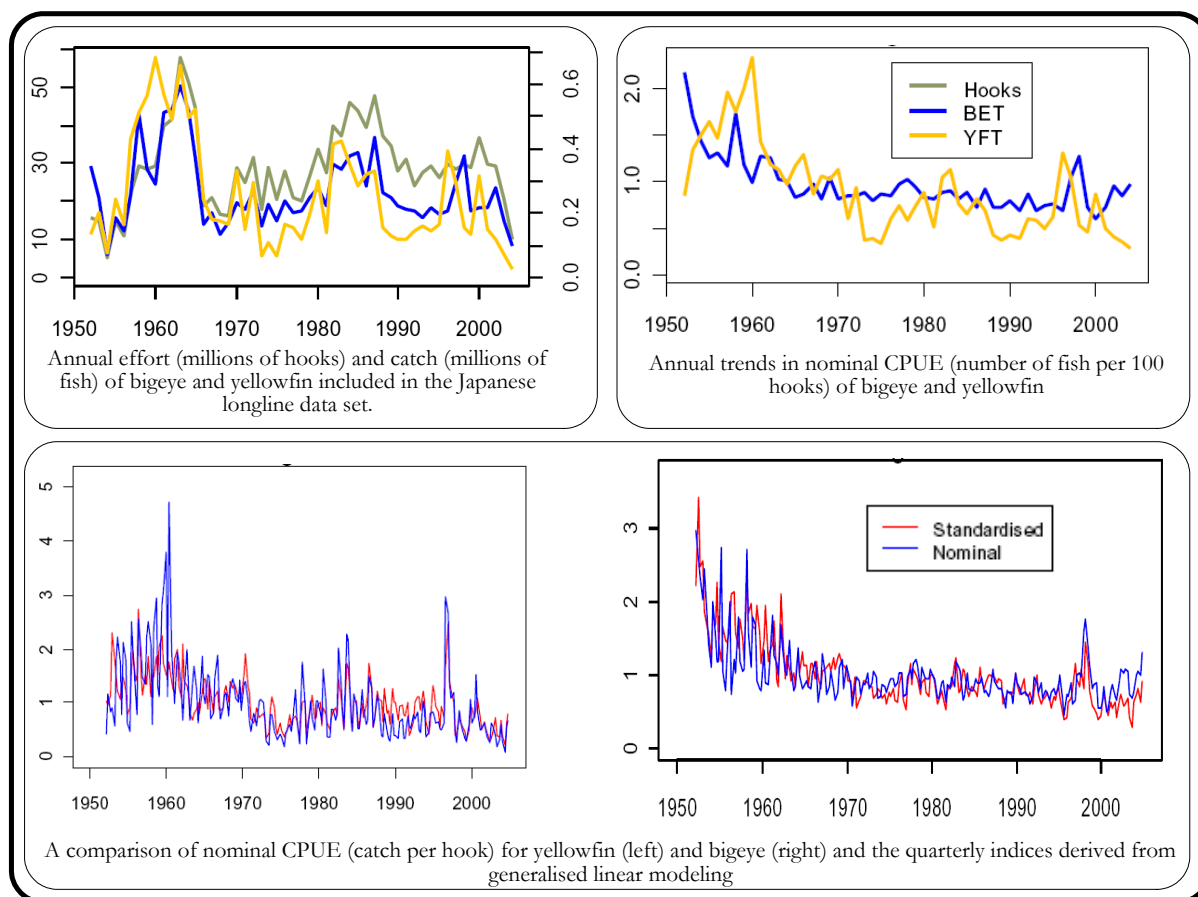


Source: Williams and Reid, 2005

The provisional WCP long line catch in 2004 (225,786 t) was around 26,000 t lower than the highest on record, which was attained in 2002 (231,968 t). The 2004 WCP albacore long line catch (65,865 t – 30%) was lower than in recent years, primarily due to a drop in catches by a number of key fleets. The provisional bigeye catch in 2004 (84,394 t. – 37%) was the second highest on record, while the 2004 yellowfin catch (70,757 t. – 31%) was the lowest since 1999 (61,384 t), which in turn was the lowest for nearly 30 years (this is understood to have been related to the age class showing poor recruitment into the purse seine fishery in 1996).

Catch per Unit Effort: CPUE has been analyzed for the dominant Japanese long line fleet since 1950s (Langley *et al*, 2005) (figure 11). This shows that whilst there was a general increase in CPUE over the 1970's and early 1980's, the overall trend is downwards, especially in recent years.

**Figure 11: LL Catch per Unit Effort for Yellowfin and Bigeye Tuna in the Western Central Pacific (20°N 170°E - 10°S 150°E)**



Source: Langley *et al*, 2005

There is a general correlation between yellowfin and bigeye catch rates in the central tropical WCP, although this is not as pronounced as in the EPO and sub-tropical areas. Catch rates are also strongly correlated with the number of hooks set, but this tends to plateau at between 500,000 and 800,000 hooks per quarter. Unlike sub-tropical areas, there is no strong correlation between depth and catch rate for bigeye tuna.

#### **B.4.3.2.2 Kiribati EEZ**

**Effort:** a number of nations have distant water fleets fishing in the Kiribati EEZ, most notably Korea, Taiwan as well as China, Japan and Vanuatu. No European long line vessels reported catches to the SPC for 2004 (SPC, 2005).

**Distribution:** the distribution of catches within and around the Kiribati EEZ are shown in Appendix C. Overall 69 % of long line catches are found in the Line Islands, 21 % in the Phoenix Islands and 10% in the Gilbert Islands. The Korean catch is focused through the whole of the tropical WPO and is found in all three Kiribati EEZ areas but mainly in the Line Islands (54 % over 2004). The Taiwan fleet is more active in the Line Islands group EEZ to the east, whilst the Japanese catch has been in the northern sector of the Gilbert Island EEZ to the west.

**Catch:** Korean catches in the Kiribati EEZ have been consistently between 10,000 t. and 11,000 t. for the past five years, with the exception of 2004 when they dropped to 5,028 t (see table 14). Bigeye usually makes up half the catch, with the remainder consisting of yellowfin tuna (30% to 40%).

**Table 14: Longline catches in the I-Kiribati EEZ (1999 - 2004)**

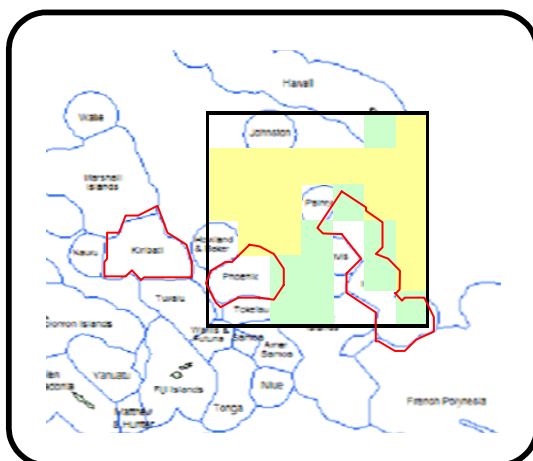
Country	Species	1999		2000		2001		2002		2003		2004	
Japan	Bigeye	942	37%	2,731	49%	2,121	56%	2,679	60%	298	50%	483	70%
	Yellowfin	762	30%	2,428	43%	1,271	34%	1,513	34%	217	37%	134	20%
	Billfish	794	32%	293	5%	262	7%	164	4%	26	4%	38	6%
	Others	21	1%	132	2%	137	4%	120	3%	53	9%	31	5%
	<b>Sub-total</b>	<b>2,519</b>	<b>100%</b>	<b>5,584</b>	<b>100%</b>	<b>3,792</b>	<b>100%</b>	<b>4,476</b>	<b>100%</b>	<b>594</b>	<b>100%</b>	<b>686</b>	<b>100%</b>
Korea	Bigeye	5,003	50%	7,298	53%	5,983	50%	6,221	53%	3,298	41%	2,271	45%
	Yellowfin	3,333	33%	4,186	31%	4,149	35%	3,166	27%	2,538	32%	2,143	43%
	Billfish	579	6%	1,844	13%	116	1%	853	7%	809	10%	441	9%
	Others	1,128	11%	369	3%	1,616	14%	1,609	14%	1,397	17%	174	3%
	<b>Sub-total</b>	<b>10,043</b>	<b>100%</b>	<b>13,697</b>	<b>100%</b>	<b>11,864</b>	<b>100%</b>	<b>11,849</b>	<b>100%</b>	<b>8,042</b>	<b>100%</b>	<b>5,029</b>	<b>100%</b>
Taiwan	Bigeye	135	46%	1,430	4%	6,673	10%	327	18%	629	38%	279	50%
	Yellowfin	70	24%	9,695	26%	11,423	17%	792	43%	392	24%	167	30%
	Billfish	70	24%	6,625	17%	11,129	17%	129	7%	149	9%	35	6%
	Others	19	6%	20,110	53%	37,237	56%	576	32%	485	29%	78	14%
	<b>Sub-total</b>	<b>294</b>	<b>100%</b>	<b>37,860</b>	<b>100%</b>	<b>66,463</b>	<b>100%</b>	<b>1,824</b>	<b>100%</b>	<b>1,655</b>	<b>100%</b>	<b>559</b>	<b>100%</b>
China	Bigeye	0	0%	0	0%	0	0%	1,293	41%	0	0%	0	0%
	Yellowfin	0	0%	0	0%	0	0%	280	9%	0	0%	0	0%
	Billfish	0	0%	0	0%	0	0%	15	0%	0	0%	0	0%
	Others	0	0%	0	0%	0	0%	1,588	50%	0	0%	0	0%
	<b>Sub-total</b>	<b>0</b>	<b>0%</b>	<b>0</b>	<b>0%</b>	<b>0</b>	<b>0%</b>	<b>3,176</b>	<b>100%</b>	<b>0</b>	<b>0%</b>	<b>0</b>	<b>0%</b>
<b>TOTAL</b>	Bigeye	6,080	47%	11,459	20%	14,778	18%	10,520	49%	4,225	41%	3,033	48%
	Yellowfin	4,165	32%	16,309	29%	16,843	21%	5,751	27%	3,147	31%	2,444	39%
	Billfish	1,443	11%	8,762	15%	11,507	14%	1,161	5%	984	10%	514	8%
	Others	1,168	9%	20,611	36%	38,990	47%	3,893	18%	1,935	19%	283	5%
	<b>TOTAL</b>	<b>12,856</b>	<b>100%</b>	<b>57,141</b>	<b>100%</b>	<b>82,118</b>	<b>100%</b>	<b>21,325</b>	<b>100%</b>	<b>10,291</b>	<b>100%</b>	<b>6,274</b>	<b>100%</b>

Source: Kiribati Tuna Fisheries Report, 2005

Japan is the second largest long line flag operating in I-Kiribati waters whose catch has also dropped in recent (2003 – 2004) years. Again bigeye represents around half or more of the catch (70% in 2004) with yellowfin providing around a third of the catch. The only other significant foreign fleet operating in I-Kiribati waters is from Taiwan. The Taiwanese catch over 2000 and 2001 was very high (37,860t. and 66,463 t respectively) but dropped down to 559 t. in 2004. During the periods of high catches, in contrast to the other main fleets, bigeye represented less than 10% of the catch, which was dominated by ‘other species’.

The Spanish surface long line fleet did not carry out any fishing activity in the western and central zones of the Pacific Ocean prior to 2004. During the first quarter of the year 2004 experimental fishery activities began, targeting swordfish with the surface long line gear in areas located between Melanesia, New Zealand and Australia. Five Spanish flag long line vessels took part in this experimental fishery starting from Jakarta. The activity was carried out for a period of 240 days at sea per vessel and concluded in December 2004. The average characteristics of the vessels involved were 285 GRT, 810 HP and 40 m in length. The experimental fishing areas included an area adjacent to and within the Kiribati EEZs, especially Phoenix and Line Island groups (Figure 12).

**Figure 12: Location of experimental Spanish long lining in the Kiribati sea area over 2004**



The gear used by these 5 vessels cited was the ‘American style’ (Florida style modified) surface long line, with an average of 1,055 hooks per set. Over the course of these fishing activities the overall catches retained taken by all 8 vessels fishing to the west of 130°W were: swordfish 693t., blue shark 1,291t., shortfin mako 238t., tunas 89t., billfish 38t. and others species 1.2 t. The total nominal fishing effort was 1,009,850 hooks set during a total of 952 fishing days or sets. The overall nominal CPUE or mean fishing yield in round weight per thousand hooks resulted in 686 kg of swordfish, 1,279 kg of blue shark, 236

kg of shortfin mako, 88 kg of tunas, 38 kg of billfishes and 1.2 kg of other species.

Source: Instituto Español de Oceanografía, 2005

Catches by I-Kiribati vessels have been very low – in 2003 only 8 t fish was caught, consisting of 2 t yellow fin, 1 t bigeye and 5 t other species.

Catch per Unit Effort: there have been two peaks (1994 and 1997) in the bigeye nominal CPUE for Korean longline fishery in Kiribati EEZ, with more than one fish per hundred hooks (figure 13). A lower CPUE of less than 0.6 was observed for the period 1999 to 2000 and provisional data shows further decline over 2003 - 2004. For yellowfin tuna, a peak of more than one fish per hundred hooks was in 1996 with a record low of less than 0.4 fish/hundred hooks in 1999. Overall, notwithstanding the peaks mentioned above, there has been a decline in CPUE for both species.

#### **B.4.4 Catch by Species**

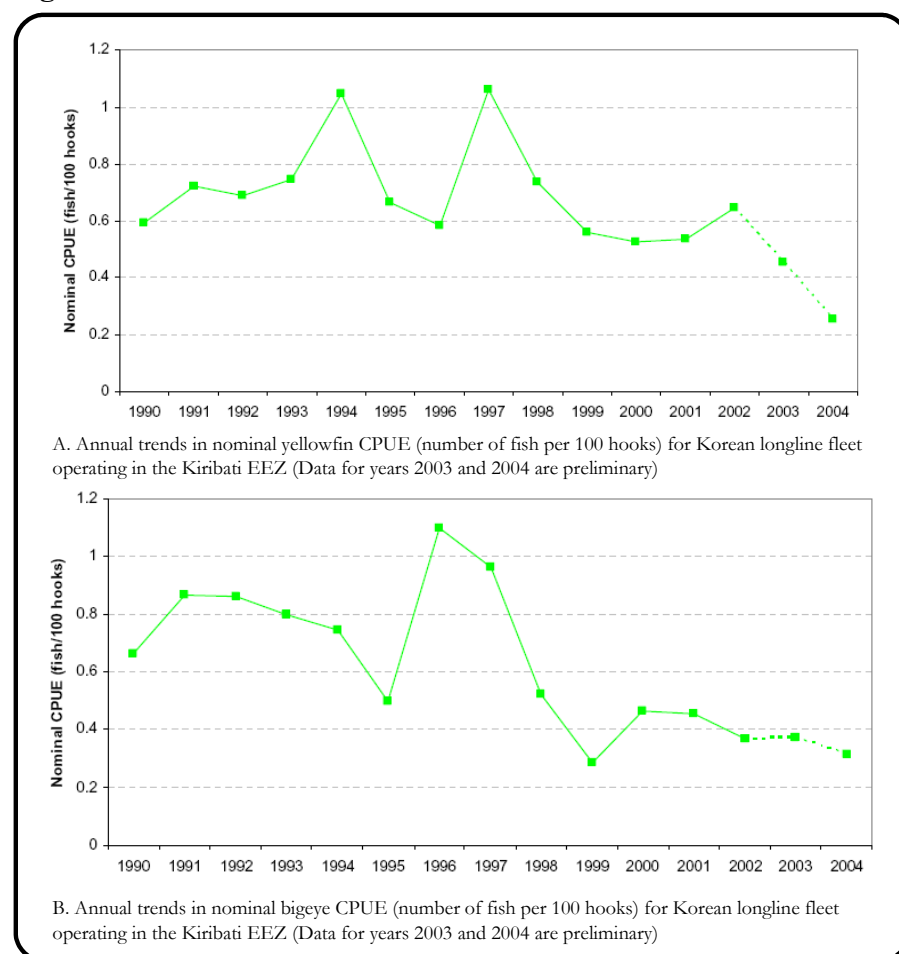
##### **B.4.4.1 Yellowfin**

Since 1990, the yellowfin tuna catch in the WCPO has varied between 320,000 t. and 500,000 t., and from 2000 to 2004 between 407,000 t. and 440,000 t. (table 15). Purse seiners harvest the majority (47% by weight in 2000–2004), with the long line and pole-and-line fisheries comprising 17% and 3% of the total catch, respectively. Catches in the ‘Other’ category in are largely composed of yellowfin tuna from the Philippines and eastern Indonesia.

**Table 15: Yellowfin tuna catch in the Western Central Pacific, 2000-2004**

Year	Longline	Pole & line	Purse seine	Other	Total
2000	74,864	13,745	201,483	134,651	<b>424,743</b>
2001	71,448	12,163	214,813	120,773	<b>419,197</b>
2002	70,975	13,357	189,585	137,430	<b>411,347</b>
2003	71,288	12,039	212,414	144,562	<b>440,303</b>
2004	69,075	11,855	178,475	147,597	<b>407,002</b>

Source: WCPFC Tuna Fishery Year Book, 2004

**Figure 13: LL CPUE for the Korean LL Fleet in the Kiribati EEZ**

Source: Kiribati Tuna Fisheries Report, 2005

Yellowfin usually represent approximately 20% to 25% of the overall purse seine catch and may contribute higher percentages of the catch in individual sets. Yellowfin is often directly targeted by purse seiners, especially as unassociated schools. Long line catches in recent years (57,000 t. to 77,000 t) are well below catches in the late 1970s to early 1980s (which peaked at 117,000 t), presumably due to changes in targeting practices by some of the larger fleets.

#### **B.4.4.2 Big Eye**

The total WCP catch of Bigeye in 2004 was 129,500 t., with 65% from long line, 1.3% from pole and line and 21% from purse seiners (table 16).

Since 1980, the long line catch of bigeye tuna in the WCPO has varied between about 40,000 t. and 88,000 t, with the record high catch being taken in 2002. Since about 1994, there has been a rapid increase in purse seine catches of juvenile bigeye tuna, first in the EPO and since 1996, to a lesser extent, in the WCPO. In the WCPO, purse-seine catches of bigeye tuna are estimated to have been less than 20,000 t per year up to 1996, mostly from sets on natural floating objects (Hampton *et al.* 1998). In 1997, the catch increased to 35,000 t, due to the increased use of FADs. High purse seine catches were also recorded in 2000 (32,500 t).

**Table 16: Bigeye tuna catch in the Western Central Pacific, 2000-2004**

Year	Longline	Pole & line	Purse seine	Other	Total
2000	71,263	2,988	32,511	13,618	<b>120,380</b>
2001	73,533	2,349	28,780	12,515	<b>117,177</b>
2002	88,249	2,805	29,085	14,346	<b>134,485</b>
2003	77,849	1,786	28,034	14,685	<b>122,354</b>
2004	84,611	1,809	27,786	15,293	<b>129,499</b>

Source: WCPFC Tuna Fishery Year Book, 2004

#### **B.4.4.3 Skipjack**

The total WCP catch of Skipjack in 2004 was 1.4 million t., 18% from pole and line and 77% from purse seiners (table 17).

**Table 17: Skipjack tuna catch in the Western Central Pacific, 2000-2004**

Year	Pole & line	Purse seine	Other	Total
2000	287,842	865,312	78,551	<b>1,231,705</b>
2001	228,996	842,356	59,966	<b>1,131,318</b>
2002	224,146	994,993	60,902	<b>1,280,041</b>
2003	247,291	980,411	62,820	<b>1,290,522</b>
2004	245,353	1,056,033	63,966	<b>1,365,352</b>

Source: WCPFC Tuna Fishery Year Book, 2004

Skipjack tuna catches in the WCPO have increased steadily since 1970, more than doubling during the 1980s. The catch was relatively stable during the early 1990s, approaching 1 million t. per annum. Catches increased again in the late 1990s and averaged about 1.26 million t. from 2000 to 2004.

Pole-and-line fleets, primarily Japanese, initially dominated the fishery, with the catch peaking at 380,000 t. in 1984, but the relative importance of this fishery has declined steadily for economic reasons. Annual skipjack tuna catches increased from the 1980s due to growth in the international purse-seine fleet, combined with increased catches by domestic fleets from the Philippines and Indonesia (which have made up 25% of the total skipjack tuna catch in WCPO in recent years).

Historically, most of the catch has been taken from the western equatorial region. The increase in catch during the late 1990s has been largely attributable to the expansion of the purse-seine fishery in the eastern equatorial region of the WCPO, including the Kiribati EEZ.

#### **B.4.4.4 Billfish**

In 2004, the total catch of billfish in the WCPFC area was just over 51,000 tonnes, comprising swordfish (42%), blue marlin (42%), black marlin (6%) and striped marlin (10%). While this total was a 6% decline over the previous year, it remained somewhat higher than the figures recorded for 2000 to 2003 (table 18).

The South-West Pacific Swordfish fishery has undergone a number of substantial changes over the last decade. The swordfish catch (in numbers) has been almost double the previous 25 year period. There have been large increases in the catches made by Australian, New

Zealand and Pacific Island Nation boats, and declines in the Japanese catch. The Japanese in particular have a long history of long lining for swordfish and other tunas.

**Table 18: Billfish catches in the WCPFC Area (2000 - 2004)**

Year	Swordfish		Blue marlin		Black marlin		Striped marlin		Total catch (t)
	Catch (t)	%	Catch (t)	%	Catch (t)	%	Catch (t)	%	
2000	20,632	49%	15,069	36%	1,853	4%	4,511	11%	42,065
2001	17,617	43%	16,608	40%	1,996	5%	5,052	12%	41,273
2002	18,883	45%	16,327	39%	2,253	5%	4,529	11%	41,992
2003	21,686	40%	24,784	45%	2,633	5%	5,567	10%	54,670
2004	21,716	42%	21,543	42%	2,923	6%	5,064	10%	51,246

Source: Lawson and Williams, 2005

#### **B.4.4.5 Non Target Species**

While a study specifically on by-catch in the Kiribati tuna fisheries has not been undertaken, the by-catch in the purse seine and long line fisheries of nearby Pacific Island countries is not likely to be remarkably different from that of the Kiribati Archipelago.

Bailey *et al.* (1996) reviewed the situation of discards in the purse seine and long line fisheries of the Pacific Islands region. They reported that in the purse seine fishery available observer data shows that from 0.35% to 0.77% of the total catch (by weight) for school sets is by-catch; for log sets, the level is higher at an estimated 3.0% to 7.3%. The most common by-catch species observed in purse seine log sets are amberjack (*Seriola rivoliana*), mackerel scad (*Decapterus macarellus*), rainbow runner (*Elagatis bipinnulata*), drummer (*Kyphosus cinerascens*), mahi mahi (*Coryphaena hippurus*) and ocean triggerfish (*Canthidermis maculatus*). Observer records show that blue marlin (*Makaira mazara*) is the most common billfish species taken in purse-seine sets. Marine turtles are taken occasionally, but there is evidence that these are usually released alive. While the reasons for the discard of target tuna species are well documented, tuna discard is an irregular and unpredictable feature of the purse-seine fishery, thus it is difficult to provide indicative estimates.

In the long line fishery over 50 non-target fish species have been observed in the tropical and sub-tropical waters of the WCPO, but there is insufficient data to estimate relative quantities. The by-catch can be categorised into shark (21 species), non-target scombrids (7 species), billfish (6 species) and other fish (21 species). The blue shark (*Prionace glauca*) was observed as the most common shark species taken throughout the WCPO. Marine turtles appear to be taken occasionally on longline vessels in the tropical waters of the WCPO.

For economic reasons, in the Kiribati Archipelago and in other neighbouring countries most of the purse seine by-catch is discarded. In the long line fishery much of the by-catch is retained as there are markets both domestic and overseas, depending on the species.

## B.5 FISH STOCK STATUS AND MANAGEMENT RECOMMENDATIONS

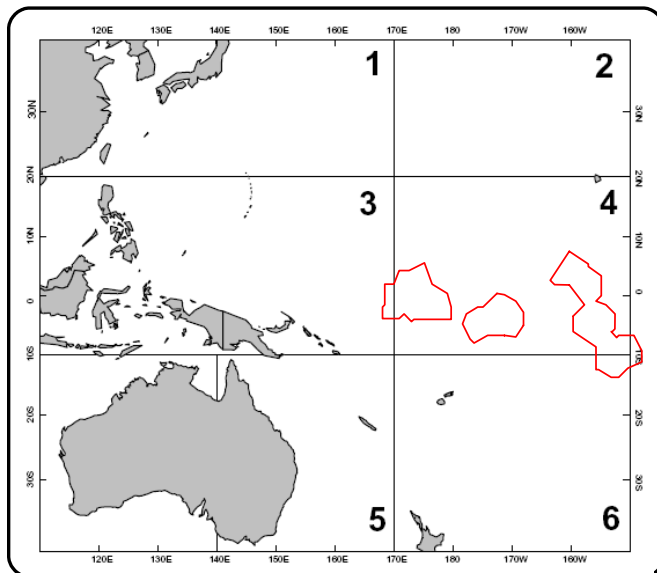
### B.5.1 Fish Stock Assessment

The assessment of fish stocks in the Kiribati Archipelago takes place at two levels:

- i. The collection of data by MFMRD, mainly through the requirement that all licensed vessels maintain daily catch and effort information on regional log sheets and communicate weekly catch reports. There is also a requirement to document all catch transshipments. These data undergoes subsequent compilation, processing, analysis, interpretation and presenting of Kiribati tuna data by MFMRD. Kiribati produces an annual 'Kiribati Fisheries Report' to the WCPFC that focuses on tuna and tuna-like species – this details the fleet structure, catches within the EEZ, transshipment levels and local developments in tuna fisheries research and statistics.
- ii. More complex sophisticated data analysis by the Oceanic Fisheries Programme (OFP) at SPC. This category is further divided into two sub-components:
  - Analysis of the Kiribati data for presentation to MFMRD for national use.
  - Combining the Kiribati data with those of other Pacific Island countries to enable regional assessments. An example of the end product of this process is the overview and status of stocks produced annually by OFP staff.

Since 2005, the SPC OFC has used a 6 region spatial stratification for the WCP, especially for yellowfin and bigeye tuna assessments. As can be seen from figure 14, Kiribati mainly falls within Region 4 and this is reflected in the species-specific assessments in the following section.

**Figure 14: Spatial stratification for the Western Central Pacific for stock assessment proposes**



Source: Adapted from Hampton *et al*, 2005a

The following sections provide an overview of the status of the key tuna and swordfish stocks in the Western Central Pacific. These reviews have been sourced from various papers presented at the 1st Meeting of the Scientific Committee of the Western and Central Pacific Fisheries Commission (WCPFC-SC1) held in Noumea, New Caledonia over 8–19 August 2005.

## B.5.2 Yellowfin tuna (*Thunnus albacares*)

### B.5.2.1 Distribution

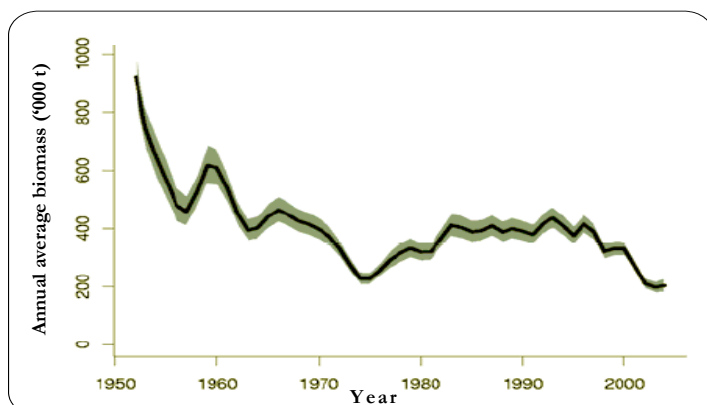
Yellowfin tuna are distributed throughout the tropical and sub-tropical waters of the Pacific Ocean. However, there is some indication of restricted mixing between the western and eastern Pacific based on analysis of genetic samples (Ward *et al.*, 1994) and tagging data. Adults (larger than about 100 cm) spawn, probably opportunistically, in waters warmer than 26°C (Itano, 2000). The natural mortality rate is strongly variable with size, with the lowest rate of around 0.6–0.8 yr<sup>-1</sup> being for pre-adult yellowfin 50–80 cm FL (Hampton 2000).

### B.5.2.2 Stock Assessment

Stock assessment of the biomass shows a sharp decline in the early model period to a low level during the 1970s and then subsequently increased to a higher level during the 1980s and 1990s (see figure 15). These changes are an effect of long-term trends in recruitment rather than attributable to the impacts of fishing.

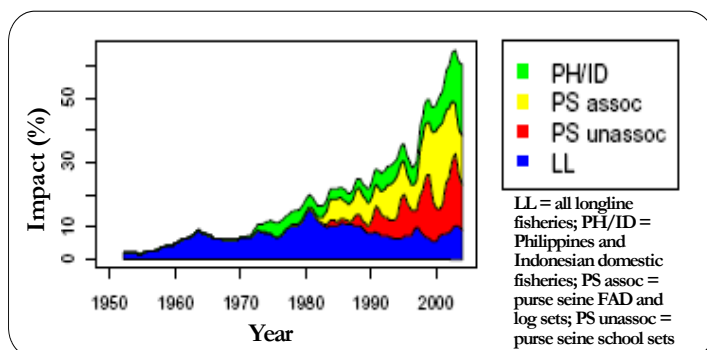
Overall, the impact of fishing has reduced the overall WCPO YFT biomass to about 30% of unexploited levels, but this is even higher for Region 4 (see figure 16), where total biomass is believed to have been reduced by over 50% as a result of fishing, particularly purse seining.

**Figure 15: YFT Estimate Annual Biomass ('000 t) for Region 4 of the Western Pacific Ocean**



Source: Hampton *et al.*, 2005b

**Figure 16: Impact of fisheries on YFT Total Biomass in Region 4 of the Western Central Pacific**



Source: Hampton *et al.*, 2005b

The Philippines/Indonesian fisheries are also considered important, as fish move directly into Region 4 from Region 3 to the west. It is noteworthy that the long line fishery has a relatively insignificant impact, which contrasts with sub-tropical fisheries areas.

### B.5.2.3 Management Recommendations

A recent stock assessment for the WCPO yellowfin stock suggests that the long-term average biomass would approximate to or fall substantially below that capable of producing MSY at 2001–2003 average fishing mortality<sup>16</sup>. It was considered that over fishing of yellowfin is now likely to be occurring in the WCPO. While the stock is not yet in an over fished state, further biomass decline is likely to occur at 2001–2003 levels of fishing mortality.

Hampton *et al* (2005a) suggest that effort should be reduced to 82% of the 2001 – 2003 average catch in order to return to MSY. Based on this, it was suggested that switching effort from log/FAD to unassociated school sets was an effective purse seine measure, where a simulated 50% reduction in log/FAD set catchability provided somewhat greater biomass gains.

## B.5.3 Bigeye Tuna (*Thunnus obesus*)

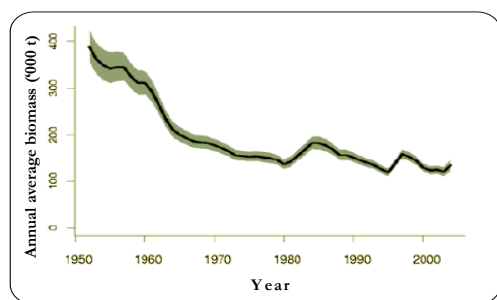
### B.5.3.1 Distribution

Bigeye tuna are distributed throughout the tropical and sub-tropical waters of the Pacific Ocean. Bigeye tagged in locations throughout the western tropical Pacific have displayed movements of up to 4,000 nautical miles over periods of one to several years, indicating the potential for gene flow over a wide area; however, the large majority of tag returns were recaptured much closer to their release points. The natural mortality rate is likely to be variable with size, with the lower rates of around 0.5 yr<sup>-1</sup> for bigeye >40 cm FL (Hampton, 2000). Recruitment of bigeye into Region 3 is predominantly resulting from an eastwards flow from neighbouring Region 3 to the west.

### B.5.3.2 Stock Assessment

Since fishing began in the 1950s, bigeye biomass fell to about half its original level by the 1970s and has remained more or less stable since then (figure 17). It is considered that this biomass has only been stabilised by higher than average recruitment and should this fall, then the biomass is likely to suffer another period of decline.

**Figure 17: BET Estimate Annual Biomass ('000 t) for Region 4 of the Western Pacific Ocean**

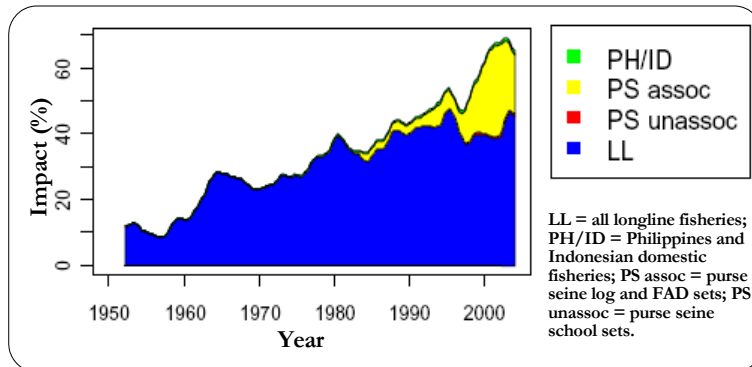


Source: Hampton *et al*, 2005c

<sup>16</sup> Two types of reference points are often now required for fisheries management: the fishing mortality (F) at maximum sustainable yield ( $F_{MSY}$ ) is used as an *indicator of overfishing*; and the biomass (B) at MSY ( $B_{MSY}$ ) is used as an *indicator of an overfished state*.

Fishing mortality is mainly for adults rather than juveniles. Hampton *et al* (2005c) determined that there has been strong fishery-related depletion of bigeye in this region of the WCPO of over 60% of the total biomass, mainly due to the longline fishery, although the purse seine fishery has also had a significant impact (figure 18).

**Figure 18: Impact of fisheries on BET Total Biomass in Region 4 of the Western Central Pacific**



Source: Hampton *et al*, 2005c

### B.5.3.3 Management Recommendations

Hampton *et al* (2005c) consider that recent fishing mortality is near to or above MSY, although total biomass remains above the MSY level. They suggest that effort should be reduced to 81% of the 2001 – 2003 average catch in order to return to MSY. Sustainable catch levels are more difficult to estimate because they are sensitive to assumptions regarding future recruitment. The most optimistic recruitment assumption (continuation of recent above-average recruitment) would still mean sustainable bigeye tuna catches are approximately 5% less than the average 2001–2003 levels.

Other potential management measures might include:

- i. Restrictions on long line catch and effort would have a greater positive impact on adult biomass than reductions in other fishery types. This is because long liners target adult fish, so reductions in their catch or effort have an immediate impact on the adult population. It is also because the long line fishery is the largest component of the fishery, and as such, proportional reductions in long line catch/effort would be expected to have a greater impact on bigeye tuna biomass than the same proportional reductions in smaller fisheries.
- ii. Switching purse seine effort from log/FAD sets to unassociated school sets was the most effective of the purse seine measures investigated.
- iii. Although quarterly closures in individual regions were not particularly effective when effort is allowed to transfer to the neighbouring region during the closure, long line closures in Region 4 might assist in maintaining bigeye stocks. There was little difference in biomass outcomes with regards to which quarter of the year the purse seine seasonal closures were applied.

## B.5.4 Skipjack Tuna (*Katsuwonus pelamis*)

### B.5.4.1 Distribution

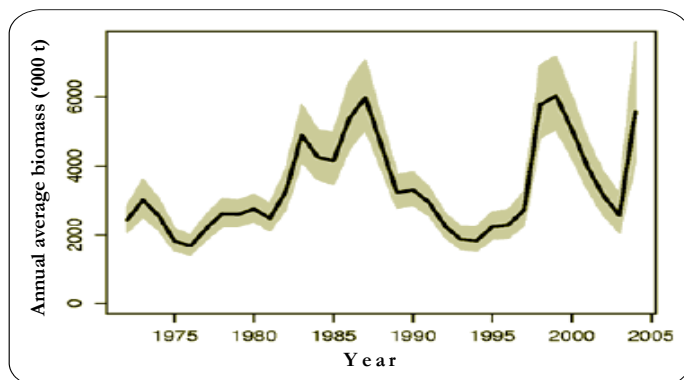
Surface-schooling, adult skipjack tuna (greater than 40 cm fork length, FL) are commonly found in tropical and subtropical waters of the Pacific Ocean. Skipjack in the WCPO are considered a single stock for assessment purposes (Wild and Hampton, 1994). However the contribution of local recruitment to the regional sub-populations is generally 70% or greater.

In the western Pacific, warm, poleward-flowing currents near northern Japan and southern Australia extend their distribution to 40°N and 40°S. These limits roughly correspond to the 20°C surface isotherm. Skipjack growth is rapid compared to yellowfin and bigeye tuna. Estimates of natural mortality rate indicate that natural mortality was substantially larger for small skipjack (21–30 cm FL) than larger skipjack (51–70 cm FL).

### B.5.4.2 Stock Assessment

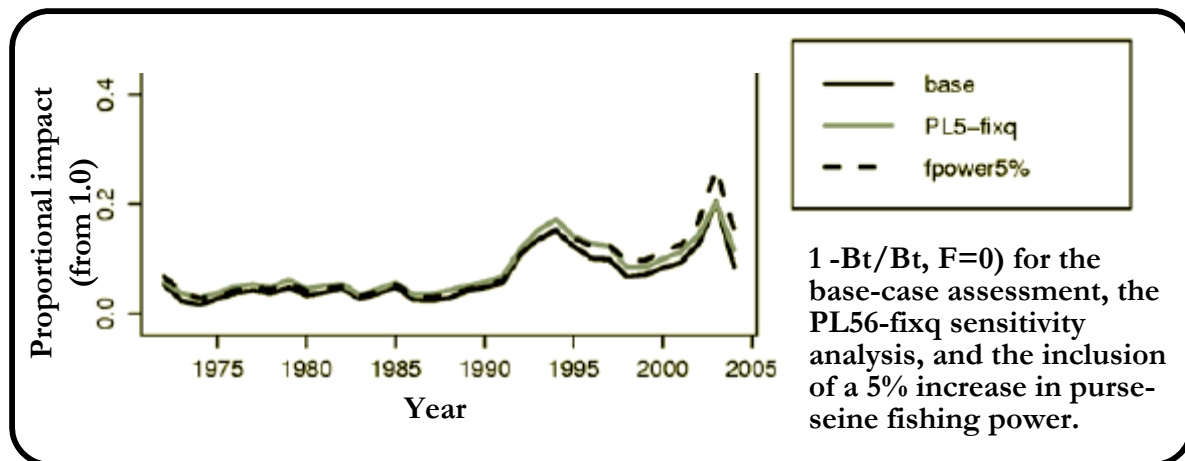
Skipjack recruitment is highly variable and driven largely by ENSO events. The high proportion of small fish observed from the equatorial purse-seine fisheries during 2004 reflects the currently high levels of recruitment over recent years. Total biomass has increased firstly in the mid-1980s in response to the increase in recruitment and increased again in the late 1990s and has been sustained by strong recruitment throughout 1997–2001 (figure 19). The high current biomass is attributable to the exceptionally high recruitment in 2004.

**Figure 19: SKJ Estimate Annual Biomass ('000 t) for Western Equatorial Region of the WPO**



Source: Langley *et al*, 2005a

Since the early 1990s, there has also been a general increase in fishing mortality rates in the Western Equatorial Region of the WCPO, although exploitation rates are much lower due to the higher overall level of biomass in this area. This is reflected in the relatively low impact of this region's fishing effort on the overall WCPO biomass, approaching 10% in recent years (figure 20).

**Figure 20: Proportional reduction in total region SKJ biomass attributable to fishing**

Source: Langley *et al*, 2005a

#### B.5.4.3 Management Recommendations

The principal conclusions are that skipjack is currently exploited at a modest level relative to its biological potential. Estimates of  $F_{\text{current}} / F_{\text{MSY}}$  and  $B_{\text{current}} / B_{\text{MSY}}$  reveals that over fishing of skipjack is not occurring in the WCPO, nor is the stock in an overfished state. Recruitment variability, influenced by environmental conditions, will continue to be the primary influence on stock size and fishery performance.

#### B.5.5 Swordfish (*Xiphius gladius*)

##### B.5.5.1 Distribution

The SW Pacific swordfish stock is mainly confined to the south-western part of the Gilbert Island group of the Kiribati EEZ and are not found further east in the Phoenix and Line island groups. Whilst there is a single stock spawning annually off NE Australia, significant spawning may also occur in the tropics considerably eastward of this region, as part of one continuous, or multiple distinct stocks.

##### B.5.5.2 Stock Assessment

During the 1980s, two studies assessed Pacific swordfish stocks by applying equilibrium production models to Japanese data. These studies provided similar results by suggesting a MSY for Pacific swordfish to be about 20,000 tonnes per year (range 18,000-28,000 tonnes). These assessments suggest that the Pacific stock was under exploited in the early 1980s. Now landings of swordfish Pacific-wide are currently closer to MSY but still within safe levels, however both the accuracy of reported landings and the estimates of MSY are very uncertain.

Long line fisheries provide the longest available time series of billfish catch. Only recently have billfish been reported on purse seine log sheets; however, indications of catch from this source are likely to be hampered by problems of non-reporting and species mis-identification (Bailey *et al.*, 1996). More recent assessments have also been inconclusive and the condition of the Pacific swordfish stock remains uncertain. Kolofy *et al* (2005) have investigated the possible application of the Multifan-CL framework methodology to stock assessment but as yet do not have any results that might be used to generate management advice.

### B.5.5.3 Management Recommendations

The provision of management advice on the basis of an updated synthesis, including the updating of Management Strategy Evaluations (MSE), is expected later in 2006.

## B.6 ENVIRONMENTAL ISSUES

### B.6.1 Non-target Species

The tuna long line fishery in the region, and to a lesser extent, the purse seine fishery, catch considerable quantities of sharks. In Kiribati few data are available on the capture of sharks by industrial fishing gear. In the wider Pacific Island region little is known about effects of fishing by the existing tuna fleets on shark population or on the wider pelagic ecosystem. Even less can be stated about the degree to which future FPA tuna fishing would affect sharks or the ecosystem. This situation highlights the need for an effective observer programme, which includes the analysis of data collected, including that on sharks.

The removal of large numbers of apex predators such as sharks could have effects at several trophic levels in the pelagic ecosystem. Compared to bony fishes, sharks are susceptible to overexploitation since they generally mature at a late age, have low fecundities, long gestation periods, and are long-lived (MRAG 2002). The size of the impact would depend on many factors, including the proportion of shark population removed. A recent paper by Ward and Myers (2005) identified changes in the pelagic fish community of the tropical Pacific Ocean by comparing recent observer data on long line vessels with data from a 1950s scientific survey when industrial fishing for tuna commenced, revealing a major shift in size composition and indices of species abundance and community biomass. The largest and most abundant predators, including shark and tuna, suffered the most. For instance, the mean mass of blue shark (*Prionace glauca*) has fallen from 52 kg in the 1950s to 22 kg by the 1990s and the estimated abundance of this species is about 13% of the 1950s figure. Overall the index of community biomass is about 10% of its former level and the community is composed of smaller fish and fewer larger predators, the increased proportion of smaller fish being consistent with reduced predation pressure.

### B.6.2 Turtles, Marine Mammals & Seabirds

Some concern has been expressed that in the Pacific Islands the tuna fisheries may negatively affect turtles, marine mammals, and seabirds. The few studies that have been done in the Pacific Islands suggest that the interaction between these groups of animals and the tuna fisheries is not as large as was originally thought.

Four species of sea turtles are known to frequent Kiribati waters. These are: the leatherback (*Dermochelys coriacea*), loggerhead (*Caretta caretta*), olive ridley (*Lepidochelys olivacea*, also known as the Pacific ridley), green (*Chelonia mydas*), and hawksbill (*Eretmochelys imbricata*) turtles (Kiribati Report to UNCED, 1992). Green turtles are known to nest in the Line Islands (specifically Fanning and Christmas Islands) King (1973) lists Enderbury Island in the Phoenix Group as one of the most important nesting sites for Green turtles in the Central Pacific. The other islands in this group are frequented by turtles but it is not recorded whether they nest here (Balzacs, 1995). SPC (2001) analyzed 2,143 observed long line sets in the western tropical Pacific during the 1990s. A total of 83 turtles were recorded, with all but one released. Of those released, 27% were released dead, while 58% were described as alive and healthy, 8% injured/stressed and 6% barely alive

For purse seines, the catch rate by school association (turtle by-catch data collected by Micronesian Maritime Authority (MMA) observers, see Bailey *et al.*, 1996) is 1.34 turtles per 100 school sets and 1.92 turtles per 100 log sets, although the 95 per cent confidence intervals of  $\pm 1.85$  and  $\pm 2.65$ , respectively, highlight the small sample sizes currently available and thus the inadvisability of extrapolation.

A report of seabird by-catch in the tuna long line fisheries of the region (Watling 2002) indicated that in the Pacific Island region “seabird by-catch is extremely rare by comparison with the situation at higher latitudes”.

In the eastern Pacific Ocean, yellowfin often associate with several species of dolphins (*Delphinus delphis*, *Stenella attenuata*, and *S. longirostris*), but the association between such mammals and tuna schools in the western Pacific is quite rare. Although cetaceans may become entangled in longline gear or hooked while removing bait, Bailey *et al.* (1996) report there are very few reports of actual marine mammal capture in WCPO longline fisheries. Purse seine vessels occasionally set on large whales but they seem to easily escape without injury.

### B.6.3 Marine Protected Areas

With the exception of the Phoenix Islands Protected Area (below) there are 11 marine protected areas (MPAs) in Kiribati, totalling 590 km<sup>2</sup> in area (table 19). MPAs in the Phoenix and Line Islands are shown in Figure 21.

**Table 19: Marine Protected Areas in Kiribati**

Designation	Name	IUCN Category	Latitude	Longitude	Size (ha)	Year
Closed area	Cook Islet Closed Area (Kiritimati WS)	Ia	2°00'N	157°20'W	3	1975
	Motu Tabu Islet Closed Area (Kiritimati WS)	Ia	2°00'N	157°20'W	1	1975
	Motu Upua Closed Area	Ia	2°00'N	157°20'W	4	1975
	Ngaontetaake Islet Closed Area (Kiritimati WS)	Ia	2°00'N	157°20'W	2	1979
	North-west Point Closed Area (Kiritimati WS)	DE	2°00'N	157°20'W	13	1975
Wildlife sanctuary	Birnie Island	IV	3°35'S	171°33'W	20	1975
	Kiritimati	UA	2°00'N	157°20'W	32,100	1960
	Malden Island (Closed Area)	Ia	4°03'S	155°01'W	3,930	1975
	McKean Island	IV	3°35'S	174°02'W	57	1975
	Phoenix Island (Rawaki)	IV	3°42'S	170°43'W	6,500	1975
	Starbuck Island (Closed Area)	Ia	5°37'S	155°56'W	16,200	1975
	Vostock Island	IV	10°06'S	152°23'W	24	1979

Note

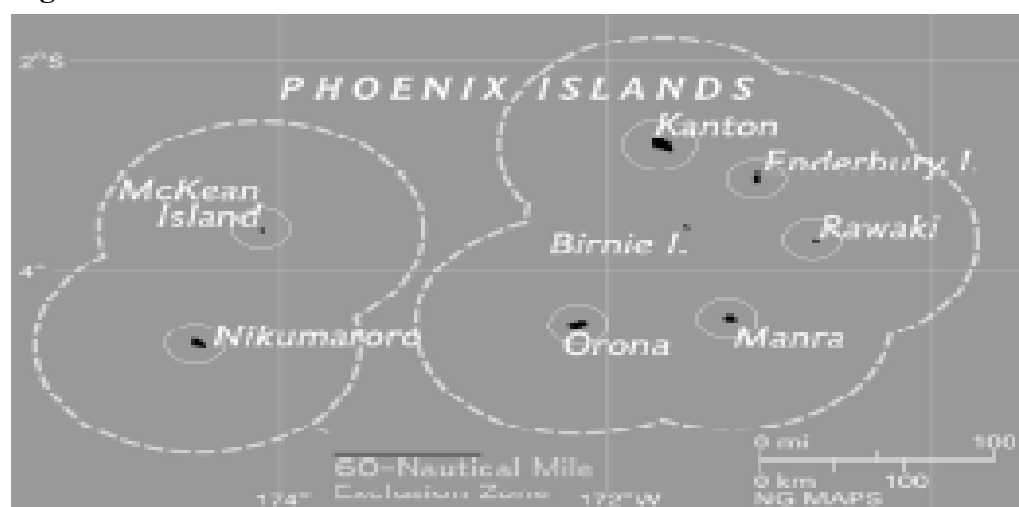
IUCN MPA categories are as follows: Ia: Strict Nature Reserve: protected area managed mainly for science; Ib Wilderness Area: protected area managed mainly for wilderness protection; II National Park: protected area managed mainly for ecosystem protection and recreation; III Natural Monument: protected area managed mainly for conservation of specific natural features; IV Habitat/Species Management Area: protected area managed mainly for conservation through management intervention; V Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation; VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems. UA Unassigned.

Source: IUCN database ([http://www.unep-wcmc.org/protected\\_areas/data/pacific.htm](http://www.unep-wcmc.org/protected_areas/data/pacific.htm)).

**Figure 21: MPAs in the Phoenix and Line Islands**

Source: IUCN database ([http://www.unep-wcmc.org/protected\\_areas/data/pacific.htm](http://www.unep-wcmc.org/protected_areas/data/pacific.htm)).

At the 8th Conference of the Parties (COP8) to the Convention on Biological Diversity (CBD), held in Curitiba, Brazil over 20 - 31 March 2006, the I-Kiribati Minister of MELAD announced the establishment of the Phoenix Islands Protected Area (PIPA). PIPA encompasses eight atolls, each with a 60 nautical mile protected perimeter, and two submerged reef systems (figure 22). Nearly uninhabited, PIPA is the largest marine protected area in the Pacific Islands at 184,700 km<sup>2</sup>, twice the size of Portugal. More than 120 species of coral and 520 species of reef fish have been identified in the area, as well as dolphins, sea turtles, and healthy seabird populations. It contains a near pristine coral archipelago with abundant marine and bird life, and is the first marine protected area in the region with deep-sea habitat, including underwater mountains. The Republic of Kiribati and the New England Aquarium (NEA) developed the Phoenix Islands project over several years of joint scientific research and discussions, with funding and technical assistance from the Global Conservation Fund at Conservation International (CI) and, more recently, CI's Pacific Islands Program.

**Figure 22: Phoenix Islands Protected Area**

Although a management plan for the site is not expected to be set for another year or so, it is anticipated that commercial inshore reef fishing, including by foreign vessels, will be banned in the PIPA. Subsistence reef fishing by the fewer than 50 residents of the Phoenix Islands archipelago will be allowed to continue. The PIPA also includes deep water, and it is unclear yet whether commercial fishing for offshore pelagics, like tuna, will be allowed. The endowment is projected to last in perpetuity, assuming management of the protected area is administered in good faith by the Kiribati government.

Under a memorandum of understanding signed by Kiribati, the NEA and CI, management and enforcement of PIPA will be financed through an endowment system that will cover the core recurring management costs and compensate the Kiribati government for the foregone commercial fishing license revenues. The size of the endowment will depend on the value of the fisheries to be closed, as well as projected PIPA administration costs; the final figure is being researched.

## **B.7 FISHERIES MANAGEMENT**

### **B.7.1 Overview**

Management of the highly migratory stocks in the Western Pacific region has historically been coordinated by the Forum Fisheries Agency (FFA). The FFA, which mainly has a policy and management harmonisation role, receives scientific advice from the SPC. More recently, FFA has been instrumental in forming the Western and Central Pacific Fisheries Commission (WCPFC) in 2004 which will provide a regulatory structure that has been lacking to date.

### **B.7.2 WCPFC Meeting, December 2005**

At the second session of WCPFC in December 2005, the Commission decided:

- i. For yellowfin and bigeye:
  - to adapt in accordance with Article 10 of the Convention, the following measures with respect to bigeye tuna and yellowfin tuna: “the total level of fishing effort for bigeye and yellowfin tuna in the Convention Area shall not be increased beyond current levels<sup>17</sup>”, and
- ii. for purse seine vessels:
  - members shall take necessary measures to ensure that purse seine effort levels do not exceed either 2004 levels, or the average of 2001 to 2004 levels, in waters under their national jurisdiction, beginning in 2006.
  - The Commission shall implement compatible measures as required under Article 8 of the Convention, to ensure that purse seine effort levels do not exceed 2004 levels on the high seas in the Convention Area or the total fishing capacity will not increase in the Convention Area.
  - For those FFA Member Countries who are Parties to the Nauru Agreement, the provisions of paragraph 7 will be implemented as a Vessel Day Scheme that will limit

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<sup>17</sup> Current level of fishing effort shall include fishing rights authorized under existing regional or bilateral fisheries partnership arrangements or agreements, provided these are registered with the Commission, and provided that the number of license authorized under such arrangements does not increase. CCMs will register their bilateral agreements or arrangements with the Commission in advance of the Third Session of the Commission in 2006.

days fished to a level no greater than 2004 levels and will be fully implemented by 1 December 2007. Until that time, the current measures under the Palau Arrangement shall remain in force.

- Other non-PNA member countries shall implement similar measures to limit purse seine effort in waters under their jurisdiction to no greater than 2004 levels, or to the average of 2001 to 2004 levels.

### **B.7.3 The Nauru Agreement**

#### **B.7.3.1 Membership**

The Nauru Agreement is a sub-regional agreement concerned with Cooperation in the Management of Fisheries of Common Interest. This is an alliance of Pacific island states whose EEZs collectively account for a significant bulk of the region's tuna catch and almost all of the purse seine catch

#### **B.7.3.2 Objective**

For the past two decades the Parties to the Nauru Agreement (PNA) have sought to coordinate management measures with a view to enhancing economic benefits from the fishery. Specifically the PNA have strived to harmonize terms and conditions of access for distance water fishing vessels/fleets and to grant preferential access to vessels of the Parties in order to encourage domestic participation in the fishing industry. The current PNA members are Federated States of Micronesia (FSM), Kiribati, Marshall Islands, Nauru, Palau, Papua New Guinea, Solomon Islands and Tuvalu.

### **B.7.4 The US Treaty**

The U.S. South Pacific Tuna Act of 1988 is between the USA, Australia, Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Solomon Islands, Tonga, Tuvalu, Vanuatu, and Samoa. After an initial 5-year agreement, the SPTT was extended in 1993 and again in March 2002, when the Parties agreed to amend and extend the Treaty and to extend the related Economic Assistance Agreement between the United States and the Forum Fisheries Agency (FFA) beyond the June 2003 expiration date, for a term of 10 years.

The 2002 extension provides licenses for up to 40 U.S. purse seiners, with an option for 5 additional licenses reserved for joint venture arrangements, to fish for tuna in the EEZ's of the Pacific Island Parties. It also contains a number of amendments to the Treaty and its annexes, such as updating the methods available for reporting; a revised procedure for amending the annexes; a revised observer program fee formula; provisions on the use of a vessel monitoring system (VMS); and general provisions on fishing capacity, revenue sharing, and linkages between the Treaty and the Western and Central Pacific Tuna Convention (WCPTC), among others.

Of the total cost for access under the SPTT, the U.S. tuna industry, as coordinated by the American Tunaboat Owners Association, provides up to \$3 million each year to the Forum Fisheries Agency (FFA) located in Honiara, Solomon Islands. The FFA Director and staff act as the SPTT Administrators for the Pacific Island Countries party to the agreement. The FFA deducts a small amount (approx. \$500,000) for treaty administration, after which 15 percent of the revenue is divided equally among FFA members, with the remaining balance (85

percent) distributed on a *pro rata* basis depending on the weight of tuna landed in each respective EEZ.

Also associated with the SPTT is an Economic Assistance Agreement between the U.S. Government (U.S. Agency for International Development) and the FFA. The U.S. Government pays \$18 million annually, subject to the availability of appropriated funds for this purpose, into an economic development fund administered by the FFA. The FFA ensures that the fund is used to support economic development programs in the region. Payments to the Pacific Island Countries under the Economic Assistance Agreement are now the only significant source of U.S. economic support for the stability and security of the region outside the assistance provided to the Freely Associated States. Under the terms of the SPTT, both the U.S. tuna industry and the U.S. Government annual payments must be made before any fishing licenses will be issued. In addition to paying access fees, the U.S. tuna industry also pays the FFA costs associated with observer coverage (including training), vessel monitoring system deployment and associated recurring costs, and a regional registration fee. Under the new agreement, the overall costs of the industry supported observer fund will be based on 25 vessels making an average of five trips and an average observer placement cost of an estimated \$4,500 per trip. Also included are newly agreed costs for program management (\$30,000) and training (\$17,000).

Although the major beneficiaries vary from year to year, on average the Governments of Papua New Guinea, FSM, the Solomon Islands, and Kiribati receive the greatest share of the funds distributed.

### **B.7.5 FSM Arrangement<sup>18</sup>**

#### **B.7.5.1 Signatories**

The FSM Arrangement for Regional Fisheries Access that provides preferential licensing conditions for domestic and locally based vessels meeting specified criteria.

The Arrangement came into force in September 1995 following signature by FSM, Kiribati, Nauru, Palau and finally Papua New Guinea. Solomon Islands subsequently acceded to the Arrangement by its signature on 6 October 1995 and Marshall Islands on 4 June 2000. The one remaining PNA country, Tuvalu, has agreed in principle to the Arrangement but has yet to accede.

#### **B.7.5.2 Objective**

The Arrangement is limited to tuna purse seine vessels, and has its roots in the desire of several FFA countries to provide a “more level playing field” for their domestically-owned vessels.

According to the actual text, the objectives of this arrangement are:

- i. To cooperate to secure, for the mutual benefit of the Parties, the maximum sustainable economic benefits from the exploitation of the tuna resources of the Central and Western Pacific;
- ii. To promote greater participation by nationals of the Parties in fisheries and assist in the development of national fisheries industries of the Parties;

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<sup>18</sup> This section is a synthesis of “*FFA initiatives related to the Palau Arrangement, purse seine management and the management of bigeye fishing mortality in the WCPO*” Len Rodwell. July 2004.

- iii. To establish a licensing regime under which fishing vessels of the Parties may gain access to the waters within the Arrangement Area on terms and conditions no less favourable than those granted by the Parties to foreign fishing vessels under bilateral and multilateral access arrangements;
- iv. To establish and enforce agreed criteria to ensure that only those fishing operations which are capable of providing genuine and quantifiable economic benefits to the Parties are eligible for licences pursuant to this Arrangement;
- v. To allow access to the exclusive economic and fisheries zones of the Parties by purse seine fishing vessels on terms and conditions which are consistent with the provisions of the Palau Arrangement for the Management of the Western Pacific Purse Seine Fishery; and
- vi. To further the objectives of the Nauru Agreement Concerning Cooperation in the Management of Fisheries of Common Interest, 1982.

### **B.7.5.3 Eligibility**

To be eligible for the FSM arrangement, vessels must meet certain regionally-agreed criteria which give special weighting to those vessels that are fully owned by the FFA member countries, provide high employment opportunities, and have an excess of €4 million onshore investment. At the end of 2003, there were 23 purse seine vessels licensed under the FSM arrangement. Vessels so licensed undergo periodic audit to determine their continued eligibility under the agreed criteria.

### **B.7.5.4 Effectiveness**

There are two aspects of the FSM Arrangement that make it somewhat unique in a developmental sense. First, its basic purpose is to provide wider access to the fishery zones of other countries rather than solely develop a particular country's tuna resources. Second, it applies only to purse seine vessels and as such greatly limits the number and kind of potential investors from within most FFA member countries. Although the criteria established for licensing are uniformly applicable to eligible countries acceding to the Arrangement, the degree to which vessels might become eligible in any particular country depends on that country's laws and regulations, including those related to flagging, investment, employment, and taxation.

In seeking to enhance the positive impacts of the Arrangement, one area in which development assistance could be quite useful is in a study to quantify the benefits and costs of the FSM Arrangement, including its impact on domestic development and potential lost revenue from license fees. Such a study would be an important prerequisite for improving the effectiveness of the Arrangement.

## **B.7.6 The Palau Arrangement**

### **B.7.6.1 Signatories**

The Palau Arrangement was developed by a sub-regional grouping of FFA members who are PNA.

The Palau Arrangement was signed in October 1992 by FSM, Marshall Islands, Nauru, Palau and Tuvalu. Kiribati and Papua New Guinea signed the following year. The Arrangement entered into force in November 1995 following the deposit of the instrument of ratification of Papua New Guinea. All PNA members with the exception of Tuvalu are Parties to the Palau Arrangement. Tuvalu has signed, but not ratified the Arrangement and has therefore agreed

not take action that might undermine it. The Palau Arrangement applies within the “Purse Seine Fisheries Management Area” defined as the EEZ or fisheries zones of the parties including the adjacent high seas in the Western Pacific Ocean where purse seine vessels operate.

### B.7.6.1 Objective

The development of the Palau Arrangement by PNA can be traced to concerns in the late 1980s that the western and central Pacific yellowfin stock was becoming over-exploited and that action should be taken to reduce catches. It was argued that reducing the purse seine effort for skipjack tuna would alleviate pressure on the yellowfin and bigeye tuna. The PNA group responded by developing informal arrangements for the management of the purse seine fishery that limited vessel numbers. Through these arrangements the PNA was able to exercise control over the fishery as a whole because of the large share of the catch taken within the EEZs of Parties (estimated at approximately 80% for the purse seine fishery) and the pattern of purse seine operations has been such that vessels require access to a number of EEZs at any one time in order to fish effectively. The assumption underpinning the development of the Palau Arrangement was that cutting effort would improve catch rates in the medium and long terms. With increased prices, foreign fishing vessels would be able to meet higher fees. In addition it was thought that the imposition of a limit on vessel numbers would lead to competition for licenses amongst vessel operators.

### B.7.6.2 Number of Vessels

By the Ninth Annual Meeting of the PNA in Nauru in April 1990, a provisional limit had been set of 164 purse seine vessels that could be licensed in the region, with vessel numbers allocated by flag with an additional allocation for domestic and foreign, but locally based vessels. This number was progressively increased at annual PNA meetings, mainly as a reaction to increasing demand for licenses to be issued by the Parties, particularly to the Taiwanese and Korean fleets. The current vessel capacity level of 205 was reached at the Twelfth Annual Meeting of the PNA in Palau in April 1993 and has not been exceeded to date. Changes in the complexion of the fleet are shown in Table 20.

**Table 20: Vessels Permitted Under the Palau Arrangement**

	Agreed				
	4/97	4/99	4/02	4/03	5/04
<u>Multi Lateral Access</u>					
US Treaty	50	50	29	40	40
<u>Bilateral Foreign Access</u>					
Japan	35	35	35	35	35
Taiwan	40	40 (+2)	41	41	33
South Korea	29	29	27	27	27
Philippines	10	10	10	10	10
<u>Domestic / Locally Based</u>					
All Parties	41	41 (-2)	40	45	52
<u>New Bilateral Access</u>					
China	0	0	1	3	4
European Union	0	0	0	4	4
TOTAL	205	205	183	205	205

Source: Rodwell *op cit*

To give this fleet size some context, the majority of the purse seine fleet is between 50 and 80 m. long, and 1,200 and 2,000 tonnes, with the largest vessel approximately 90 m. in length and 2,400 GT.

The Palau Arrangement received little support from distant water fishing nations, particularly Japan, as these nations had no say in the decision making process. However, the importance of access to the EEZs of the Parties to the Palau Arrangement in the purse seine fishery meant that the scheme could be effectively implemented.

The PNA and the Parties to the Palau Arrangement have met annually to review vessels numbers. In addition to the revisions that saw the limit rise from 164 vessels to 205 vessels, a major change was made at the 13<sup>th</sup> Annual Meeting of PNA in Honiara in April 1994. At that meeting it was agreed to substantially revise vessel numbers reducing by 10% the number of bilateral licenses available to each DWFN and to increase the number of licenses assigned to the “domestic/locally based” category by an equivalent amount.

#### **B.7.6.3 Bi-Lateral Agreements**

These changes noted above became effective in April 1997, allowing DWFNs adequate time to adjust their fleet operations. The reduction in bilateral licenses was aimed at promoting domestic industry development by encouraging DWFN operators to base their vessels locally in the region on the premise that such vessels provide greater economic benefits than bilateral access vessels, as well as encouraging onshore investment in the tuna industry. This initiative was taken in conjunction with the implementation of the FSM Arrangement

Policy was changed in 2000. A new bilateral access category was created to provide for new entrants taking account of the decline in bilateral access vessel numbers for Taiwan. This has occurred because a significant number of Taiwanese owned vessels have reflagged to Marshall Islands and Vanuatu and now operate under the FSM.

The parties recognised the complex issues surrounding such a policy, mainly regarding the potential for increasing capacity in the fishery. They agreed that no new purse seine vessels would be licensed prior to Parties having the opportunity to consider a review of the Palau Arrangement which had commenced in April 2000.

#### **B.7.6.4 Special Arrangements**

The category of special arrangements was created to provide an opportunity for Parties to licence additional vessels on a temporary basis in circumstances where the number of operational vessels are below the maximum of 205. This circumstance often arises because the US fleet is well below its maximum allocation of 40 vessels. Also there was a need to utilise vessel numbers notionally allocated to United States flag vessels that were not being utilised under the Multilateral Treaty on Fisheries. There has been a steady decline in the participation of United States flag vessels since 1991, from a peak of 50 to a current level of 13.

Vessels allowed under special arrangements are shown in Table 21.

**Table 21: Vessel Allowed Under Special Arrangements**

Category	Agreed May 2004
EU Vessels part-time in Kiribati Waters Only	2
Domestic/Locally Based	9
China	2

### B.7.6.5 Issues

The existing Palau Arrangement has been relatively successful in limiting vessel numbers in the purse seine fishery. However, the parties were keen to move away from the current structure of the Palau Arrangement for a range of reasons.

- i. The Arrangement locks in vessel limits by specific fleets, thereby difficult making it difficult to change these levels, introduce new fleets, or give preference to certain types of vessels, particularly domestic and foreign locally based vessels.
- ii. The restriction also meant that it was difficult for the parties to introduce mechanisms to maximise access fees because of the entrenched position of the existing operators.
- iii. There was also a need for a more effective measure to limit fishing mortality in the light of stock assessment warning signals related to bigeye as well as yellowfin.

### B.7.6.6 The Vessels Day Scheme

Concept. In response to the issues, in 2000 the Parties to the Palau Arrangement commissioned consultants to undertake a comprehensive review and analysis of the purposes, objectives and principles of the Palau Arrangement. The major recommendation of the consultants was to replace the limits on vessel numbers by fleet with limits on vessel days by zone. The Parties accepted the recommendation, and decided to replace the limits on vessel numbers by fleet in the Arrangement with limits on purse seine fishing days in the waters of each Party. The purse seine fishing day limits will be implemented by a Management Scheme called the Vessel Day Scheme (VDS). As noted above, this scheme will come into force on December 1, 2007.

Objective. The VDS aims to enhance the economic and biological sustainability of the western and central Pacific purse seine fishery by:

- i. controlling the level of fishing effort by purse seine vessels within limits consistent with resource sustainability; and
- ii. increasing economic benefits to resource-owning states and economic returns to participating vessel owners.

Level of Fishing Effort. The Scheme provides for an annual level of Total Allowable Effort (TAE) for purse seine fishing in the waters of the Parties to be set for Management Periods of three years. The annual TAE for the waters of the Parties for the first three year Management Period will be set at 27,386 days.<sup>19</sup> This is the average level of purse seine effort in the waters of the Parties for the period 2000 to 2002 estimated by SPC/OFP.

Definition of A Fishing Day. For the purpose of the Scheme, a fishing day is defined as any calendar day, or part of a calendar day, during which a purse seine vessel is in the waters of a Party outside a port, but does not include days for which advance notice has been given that a vessel will be in the waters of a Party but will not be undertaking fishing activities – such as when a vessel is in transit. Vessel days involving fishing in more than one zone in a day shall be apportioned according to the distribution of reported positions in a day between zones – this principle shall also apply to days involving reporting from the waters of non-Parties and the high seas.

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<sup>19</sup> To be confirmed.

Fishing Power. Recognising that the fishing power of vessels varies, particularly with the size of vessels, the Parties have decided that fishing days by vessels of different sizes should be accounted as shown in Table 22.

**Table 22: Vessel Days by Vessel Size**

Vessel Length	Vessel Days
< 50 m	0.5
> 50 m < 80 m	1.0
> 80 m	1.5

Allowance for FSM and the Multilateral Treaty. In order to meet their obligations under the FSM arrangement and the Multilateral Treaty with the US, the Parties have set aside pools of fishing days to provide for fishing effort by FSM Arrangement vessels fishing outside the waters of their Home Parties. and US Treaty vessels. The number of days in these pools has been calculated as the average fishing days in the waters of the Parties for the period 2000 – 2002 by vessels fishing under the FSM Arrangement and the US Treaty as shown in Table 23.

**Table 23: Basis for Determination of the FSM Arrangement and US Treaty Days Pool**

	Number of Fishing Days by FSM Arrangement Vessels in National Waters Other than the Waters of their Home Parties	Number of Fishing Days by US Treaty Vessels in the Waters of the Parties
2000	1,738	3,520
2001	2,967	3,742
2002	3,306	3,358
Average	2,670	3,540

Allocation Between Parties. The balance of the days in the TAE available for allocation to the Parties is calculated as shown in Table 24. This is allocated between individual parties according to a formula which takes into account the biomass and the share of effort (table 25). Under the example used Kiribati would be allocated 3,889 days. I-Kiribati officials spoke of a final allocation in excess of 4,000 days but this number was not confirmed – indeed final adjustments are likely over the next year to take account of results gained in the pilot scheme to be established in one country (identity not divulged).

**Table 24: Calculation of TAE Available for Allocation Among PNA Parties**

	Days
Average Total Fishing Days by Fleet (average 2000 – 2002)	35,717
Average Fishing Days in the High Seas	-7,119
Fishing Days in non-PA National Waters	-1,213
PNA Parties TAE	27386
FSM Arrangement Pool (average 2000 – 2002)	-2,670
US Treaty Pool (average 2000 – 2002)	-3,540
<b>TAE Available for Allocation to PNA Parties</b>	<b>21,175</b>

Source: Rodman *op cit*

**Table 25: Calculation of TAE Available for Allocation Among PNA Parties**

Parties	Share of Biomass (%)	Share of Effort 1996-2002 (%)	Weighted Average (%)	Party Effort Allowable (Days)
FSM	27.2	24.18	25.69	5,440
Kiribati	17.5	19.23	18.37	3,889
Marshall Islands	10.4	5.20	7.80	1,652
Nauru	1.8	7.69	4.74	1,005
PNG	22.0	37.16	29.58	6,264
Palau	5.6	0.34	2.97	628
Solomon Islands	11.7	5.43	8.57	1,814
Tuvalu	3.8	0.76	2.28	483
<b>TOTAL</b>	<b>100.0</b>	<b>100.00</b>	<b>100.00</b>	<b>21,175</b>

Source: Rodman *op cit*

Management Period. PAEs will be allocated to each Party for the first three year management period. Each Party will have an obligation to ensure that the number of fishing days by purse seine vessels in its waters does not exceed that Party's annual PAE allocation subject to the arrangements for transfers (see below). There will be penalties in the form of deductions of PAE if a Party exceeds its annual PAE.

Transfers. The Parties recognise the need for the allocation of fishing effort to include some flexibility to respond to changes in fishing conditions across the region, especially the impact of changes in oceanographic conditions. The scheme includes the following arrangements for transferability:

- i. Parties may freely transfer unused PAE between themselves for a Management Year;
- ii. A Party may freely transfer unused PAE between Management Years in the same Management Period.
- iii. A Party may transfer up to 30% of its PAE (if not used) between the final management Year of a Management Period and the first Management Year of the following Management

Monitoring. All purse seine vessels undertaking fishing activities in the Area will be required to be registered on a VDS register, which will be used to monitor each Party's use of its allocated PAE. A precondition for a vessel's registration on the VDS register will be registration on the FFA VMS and Regional Registers. Vessels will be required to send regular ALC transmission reports while they are in the Area, so that their fishing activities may be monitored.

Use of Fishing Days. Each Party will be free to use their fishing days as they wish. Parties can generally be expected to give stronger preference to domestic and locally-based vessels in allocating fishing days.

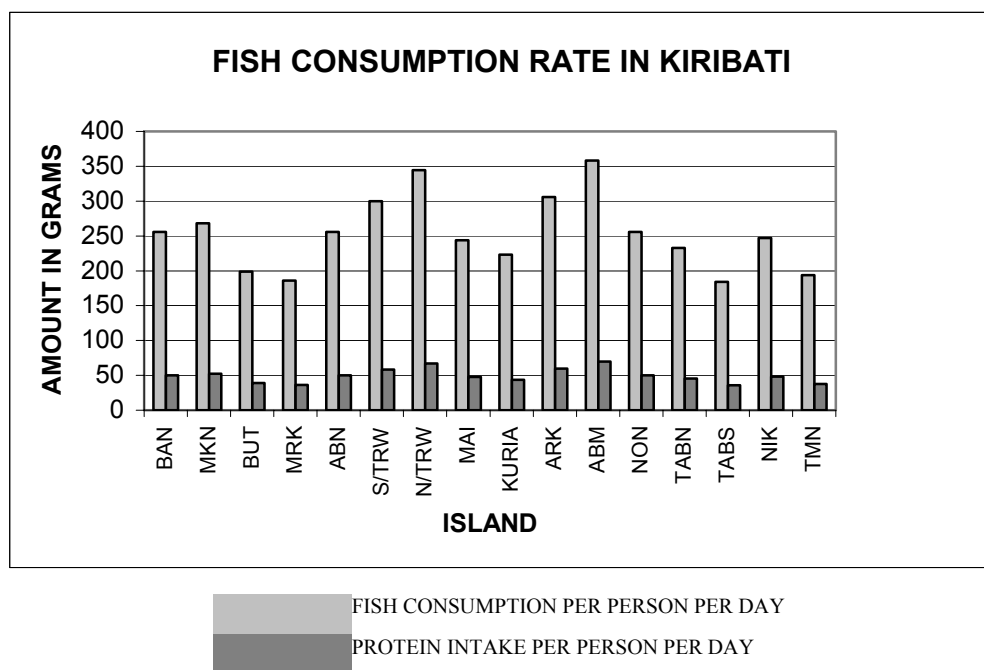
Potential Impact. The combined effects of the revised Palau Arrangement and the FSM Arrangement can be expected to further accelerate the beneficial development of domestic and locally-based fleets of the Parties. With the TAE set at the average level of fishing effort in 2000-2002, competition for access by distant water purse seine vessels can be expected to strengthen, and access fees are expected to increase substantially.

## B.8 THE DOMESTIC MARKET FOR FISH

Fish is the main form of protein intake in Kiribati. Traditionally, I-Kiribati households were subsistence fishers, catching for their own needs. With increasing urbanisation there has been some development in the market, and local supermarkets stock imported canned fish and frozen fish. However, the main distribution channel in South Tarawa is direct from fishermen, with sales along side the only road or in designated fish markets that are found in some communities. Chilled fish is normally maintained in insulated boxes. Some fish is smoked for local consumption, and it is understood that dried salted fish remains important on the outer islands where there is a lack of commercial outlets and lack of electricity. There is an on-going government programme to supply solar powered ice makers to outer islands.

Figure 23 highlights the high level of consumption, with up to 350 g. per day, with an average of about 250 g. per day. This is equivalent to an average annual need of between 8,000 and 10,000 t.

**Figure 23: Kiribati: Daily Consumption of Fish**



Source: Annual Report 2004

## B.9 PORTS AND INFRASTRUCTURE

The Ministry of Information, Communications and Transport (MICT) is the government body responsible for implementation and regulatory roles and functions for the Sea (Maritime) transportation and Air transportation sub-sectors.

In 2000, the Government of Japan handed over the Betio Port Development Project, which is managed by the Kiribati Port Authority under The Kiribati Ports Authority (KPA) Act 1990. The port is the principal marine terminal for Kiribati, catering for visiting ships and inter-island cargo and passenger services. Berths can now accommodate vessels up to 6 m. draft, within a tide range of 0.8 to 2.7 m.

Most of the activity takes place at anchorages outside the main port with depths of around 12 metres. Most of the container traffic is discharged at these anchorages using a crane barge and transferred to shore by lighter. Handling rates are reported to be good with the capability to discharge 250 containers in 30 hours when up to three container vessels may be at the

anchorage. In its Business Plan (2004 - 2007), KPA acknowledges that the infrastructure is inadequate and the plant and machines do not meet operational demand.

While European purse seiners would be able to trans-ship in Kiribati, they are unable to land directly. There is discussion about extending the wharf at Betio into deep water, but there is no timetable for development. In 2002, the last year for which data is available, 56,880 tons of tuna, predominantly skipjack, was trans-shipped in Betio by 77 Korean vessels and 1 US vessel.

## **B.10 PROCESSING AND MARKETING ACTIVITIES**

CPPL replaced the previous SOC in 2001. CPPL is involved in selling fresh fish collected from its outer-islands fish centers mainly to Government schools and hospital. Exportation of fish has not been favorable given high transportation costs to markets overseas. The company has a cold store with 200 t. capacity, a blast freezer that can handle 500 kg per day and 2 t. per day ice maker. Currently, CPPL processes about 1 t. of fish per day. It is the only tuna processor on then island, but handles only small quantities.

The company has a carrier vessel that collects fish from four outer islands, making a visit every 5 days. Currently all produce are sold locally, with frozen tuna loins and reef fish. The company is looking at preparing added value tuna consumer products packed in retort pouches. Any plans by Government to promote fish processing will also be carried out by CPPL.

CPPL has a branch at Kiritimati Island, which exports fish to Hawaii and was the beneficiary of a recently completed Japanese donor project to provide handling and processing facilities along with a long liner, and four hand liners. Here there is cold storage of 50 t., a 500 kg. per day blast freezer and a 2 t. per day ice maker. The facility exports reef fish and lobster to Hawaii.

The company is registered with the U.S. FDA, and is aware of the need to implement HACCP procedures. However, there are major issues to be resolved prior to the company establishing export capability; most notably continuity of supply, increased processing activity and reliable transport. The company would be interested in augmenting its production capacity through acquirement of small long liners (1,000 hooks to catch 100 kg per day).

The company acts as an agent for foreign fishing companies. It is also an agent for I-Kiribati fishermen looking for foreign berths. Currently, it has 80 fishermen placed, with 50 on Japanese boat and the remainder on Taiwanese.

The Atoll Seaweed Company Limited (ASCL) is involved in the production of dried seaweed (*E.cottoni* and other new strains) to supply the EU market. The company has been assisted by a long term EC project which ends in November, 2006 (see above). The shareholders of ASCL are MFMRD and the Ministry of Internal and Social Affairs.

The project has full time employment for 9 people in South Tarawa and 3 in Kiritimati, with up to 30 casual workers taken on to prepare monthly dispatches. While the company has an annual capacity for 4,000 t., it only produces up to 1,400 t. and 5,000 t. is the minimum capacity for a viable processing plant.

The financial viability of the project is made difficult by the large distances between islands. Also in recent years, income has been reduced as export prices are in US Dollars and this has depreciated against the Australian Dollar. The company makes an operating loss but receives a subsidy from government.

ASCL sells only to Sepu, based in the Philippines, which is a representative of a buyer in Copenhagen, Denmark. Production of seaweed has been erratic due in part to people shifting effort now and then between seaweed farming and its closest rival, copra cutting. Recent moves to increase price of copra by means of Government subsidy had caused great decline in production. Also there was competition with a cruise liner making weekly stops in Fanning Island, which produces more than 90 per cent of the total, with 231 households involved. Other factors affecting seaweed production include changes in weather patterns and high predation.

It is difficult to add value in South Tarawa to the raw material due to the lack of adequate water, the relatively high cost of electricity and the need for chemicals. There is some consideration of centering production and distribution in Fanning in order to reduce costs. Additionally, there would be interest in a regional project with different islands producing for a central processing facility.

The KAO is a joint venture fishing company with Kiribati Government having 49% share and Ootoshiro of Japan having the remaining 51%. The Company is involved in Offshore fishing for tuna using purse seine fishing gear. The recent changes made to the management structure of the company will see the appointment of a local manager stationed in Kiribati. The Board of Directors is made up of officials from the Ootoshiro company and 3 directors from the I-Kiribati side. The Permanent Secretary for the Ministry of Fisheries and Marine Resources Development continue to provide secretarial duties to the board.

## B.11 AQUACULTURE

Milkfish. An 80 ha milkfish farm was established by government on South Tarawa in the late 1970s to produce bait for the domestic pole-and-line fishery. However the farm has never operated with great success, partly because of infestation of the ponds by introduced tilapia, and partly due to the performance difficulties of the national pole-and-line fleet. There are plans to increase production of milkfish for food and to produce frozen bait for long line vessels. The Government is also attempting to promote private milkfish farming in the outer islands.

Seaweed. *Eucheuma* seaweeds have been cultured in Kiribati since the early 1980s and farms established in suitable atolls throughout the country's three island groups. Recently a new strain of seaweed was introduced. Farming involves attaching small pieces of seaweed to lengths of fishing line staked out in the lagoons. The seaweed is harvested after 45 to 60 days, sun-dried and packed into bales for shipping.

Sea cucumber. (Beche de mer): a project is on going to provide material for restocking of wild populations.

Pearl Oysters. The Pearl Project was initially funded by the Australian Centre for International Research (ACIAR). The project began in 1994 and funding ended in December 2005. After more than 10 years of research, and it was proven that pearls can be produced in Kiribati using hatchery bred oysters. It was initially concluded that a pearl industry was not feasible due to the low numbers of natural stocks of pearl oysters in Kiribati. However, it has been proven that with hatchery technology and such an industry can be supported through the production of juvenile oysters in a land based facility.

Ark Shellfish. A project to farm ark shellfish (*Anadara maculosa*) has been developed.

Trochus. Efforts are being made to farm Trochus (*Trochus niloticus*).

Sponges. A project plan exists to identify commercial sponge species like *Coscinoderma mathewsi* in Kiribati waters and to collect scientific data about sponge for further investigating, utilization, sustainable measures and future production of the resource. The end output is expected to be commercial farming of sponges.

Mangrove crabs. Plans exist to establish facilities to farm mangrove crabs in order to repopulate wild resources.

Giant clams. The I- Kiribati Government is implementing plans to revive the giant clam population. This will involve collection of natural brood stock from the wild and to get them spawned at the government hatchery. Animals will be distributed to the Islands. The additional 2006 work plan for the hatchery is shown in Table 26.

**Table 26: Additional Work Plan for 2006 / Achievements 2005**

Programs	Objectives	Goals	Activities	Future Plan	Achievements 2005
Sea cucumber	To spawn WT and Release for Re-stocking Tag release for re-stocking and monitoring	To produce from hatchery 20,000 juv for first and second half of 2006 Release Progress analyses through tagging programs in mid 2006 Develop appropriate hatchery culture system in Kiribati	Broodstock collections as scheduled on 2006 work prog 2 seasonal spawning runs for first and second half 2006 Tag and release in mid and end of 2006 at Abaiang and Tarawa or other islands	To maintain restocking program To develop documentation on white teatfish spawning, larval and juvenile rearing in hatchery system by end of 2006 Quarterly presentation on progress of WT To continue releases to all outer islands	Produce 8,000 juv but collapses at end of 2005 Tagging knowledge achieved through SPC consultant Experimental tagging using chemicals Broodstock collection problem achieved
Trochus	To spawn for introduction to non lagoonal islands as income alternatives and food	To produce 30,000 for introduction to priority islands and others To measure success of release through monitoring as scheduled	Hatchery spawning and culture of juveniles to release sizes (20~40mm) To release in 2006 a few thousands as scheduled on program	To maintain productions until all islands are covered by 2007 Quarterly presentations on progress Documentation development on spawning and culture of larvae and juveniles in the Kiribati hatchery	Produces 2,000 juv Manage to grow juv in cages as brood stock
Clam	To produce for re-stocking and marketing	To produce juveniles for development of culturing system and trial releases Progress tests through experimental spawning and culture of juv. in hatchery and cages towards mid or end of 2006	Broodstock collections and spawning runs from Jan~June for first intensive culture trials Projecting trial releases at end of 2006 through continuous monitoring in hatchery	Monthly presentation of progress Documentation on spawning and culture of produced larvae and juveniles To restock in 2007/2008 depleting marine zones	Manage to spawn but requires further studies Broodstock problem is a great achievement Complete holding tanks for clam productions
Te Bun	To carry out spawning trials for re-stocking to marine ecosystems experiencing stock depletion	To produce juveniles from hatchery through intensive preliminary studies as scheduled this 2006	Collection of broodstock for testing in hatchery as scheduled on work program Transplant of live te bun from outer islands to Tarawa	Monthly presentation on findings and progress Review of program in mid and end of 2006	Still requires more studies Records of gonad index analyses
Micro-algae culture	To maintain cultures as feed for cultured species Extract micro-algae from marine ecosystem	To develop best culture system for the supply of quality feed	Monthly Culture Purification Programs and stocking up of stock prior spawning exercises	Monthly presentation on culture programs By end of 2006 extraction trials be presented	Establishment of stable supply of best feed in our hatchery
Hatchery Equipment maintenance	To keep and care of light and heavy equipment	To maintain equipments as support facilities to hatchery programs	Monthly maintenance of Heavy and Light equipment as scheduled on 2006 program	Equipment status reports every 3 months	Equipment are still running New supply from OFCF for hatchery uses only

## B.12 INTERNATIONAL TRADE

Table 27 provides a list of the 12 companies licensed to export fish and fish products. It is reported that on occasions export shipments have been prevented due to export licenses not being in order.

Table 28 provides a summary of fish exports from 1999 to 2005. As will be noted the main elements are beche-de-mer, seaweed and petfish. However, export interest is limited.

In 2002, 350 t. of canned fish was imported, valued at A\$571,000 (€328,000) mainly mackerel from Chile and Australia.

### B.12.1 Health and Sanitary Conditions

There are no procedures for health and sanitary, and no national inspection service. CPPL considers that a small project may be possible through the regional DEVFISH, but that possibility has, to-date, not been discussed. Exports do need an export permit and a DF officer is stationed at the airport in South Tarawa to inspect personal exports of fish.

A workshop in 2002, covered topics on fish preservation, market set up for fish handling, grading of marine products and HACCP Plan which also covers microbiological hazards that invariably exist at various points, determination of critical control points (CPP), descriptions of CCPs, monitoring of CCPs and measures that can be taken to control these hazards. Targeted participants include personnel from licensed companies exporting marine products as well as staff from the Fisheries Sub-division. A total of 20 participants attended the training.

A limitation is the perceived high cost of implementing controls when exports are limited.

## B.13 INSTITUTIONAL ASPECTS

### B.13.1 Legal Basis

The principal fisheries legislation is the Fisheries Ordinance 1978 (Cap. 33)<sup>20</sup>. Principal subsidiary legislation made under the Fisheries Ordinance 1978 includes:

- Prohibited Fishing Areas (Designation) Regulations 1978;
- the Proclamation of Fisheries Limits 1979;
- Fisheries Conservation and Protection (Rock Lobsters – Panulirus Species) Regulations 1979;
- Fisheries (Processing and Export) Regulations 1981;
- Fisheries (Vessel Licences) Regulations 1981.

The absence of a formal domestic fishery management plan and supporting legislation is thus superseded by the legislation that gives the Minister, Chief Fishery Officer/Director of Fisheries, and Licensing Officer total authority and total for the current non-transparent and ad hoc management of the fishery that is focused on revenues.

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<sup>20</sup> In this document, description of the main provisions of the fisheries legislation is based on the consolidated version of the Fisheries Ordinance printed in 1992 as modified by the Fisheries (Amendment) Act 1992, the Fisheries (Amendment Act) 1995 and the Fisheries (Amendment) Act 1997.

**Table 27: Exporters of Sea Products: 2005**

COMPANY	COMMODITIES
United Marine Product	Bech-De-Mer
Cast Trading Company	Shark Fins
Kiribati Aquatic Products	Bech-De-Mer
Karu Marine Exporters	Bech-De-Mer
Marine Products Kiribati	Bech-De-Mer & Shark Fins
Mat	Bech-De-Mer
W.K.K	Bech-De-Mer & Shark Fins
Tarawa Fishermen Co-Op	Shark Fins
Tiiki Company	Bech-De-Mer
Kiribati Seafood Company	Shark Fins
Lightly Damp Company	Pet Fish
Mauri Marine Exports	Shark Fins

**Table 28: Summary of Marine Product Exported during the year 1999 - 2005 (kg - ex petfish)**

Species	1999	2000	2001	2002
Sharkfin	3,094	2,066	186	186
Tuna Jerky			120	120
Petfish (pieces)	96,955	73,977	115,091	554,060
Bech-de-mer	900	53,877	8,875	14,476
Milkfish				300
Trevally			284	337
Paddletail		16,188	1,528	343
Grouper (kuau)			1,326	
Seaweed		744,930	1,170,655	679,372
Wahoo				10
Yellowfin			165	
Emperor			254	110
Octopus	66,000			
Labridae	18,796		6,456	
Serranidae	5,130			
Parrotfish				
Snapper	473			

Species	2003	2004	2005
Sharkfin	953	345	2,747
Tuna Jerky	118		
Bech-de-mer	6,434	1,692	39,956
Small clams	184		
Milkfish	100	73	
Trevally	20	74	
Paddletail	50	82	
Grouper (kuau)	130	466	
Seaweed	447,175	427,760	589,515
Labridae	20,486	10,449	
Serranidae		48,436	
Parrotfish		41	

Under the current Fisheries Act Cap.33 1992 Ed., the Minister's authority is absolute to act in any manner he sees fit, without any guidelines or regard to conservation or sustainable fisheries manner. The Minister may take any measures he sees fit to promote development of fishing and fisheries in Kiribati to ensure that the resources of Kiribati are "exploited to the full for the benefit of Kiribati" (Art. 3 [1]). Further, the Minister has full powers of appointment of the Chief Fisheries Officer, fisheries and licensing officers to carry out his/her direction (Art. 3 [2]. The Minister may give any discretion regarding licenses for applicants and also for research vessels (Art. 4 [1] and Art. 19) and enter any agreement with any person, government, agency of government, or international agency to enable him/her to carry out their function, for licensing purposes, or for limiting provisions of the Act to give effect to any convention (Art. 20). In essence, no matter what is in the Act, the Minister may, at his absolute discretion with due regard to his position obviate the impositions of the Act.

### **B.13.2 Fisheries (Processing and Export) Regulations**

This act addresses application forms; fees which vary according to class of production (A-F) and product type from A\$50 to A\$1/annum; validity, transferability, terms and conditions, and display of the license; compliance with the Pure Foods and Public Health Acts; cancellation and suspension; operating requirements of Schedule 4 of the regulations (except for exemptions from the Chief Fisheries Officer); certificates of export; prohibited exports; sampling; lawful destruction of fish by a licensing officer.

Schedule 4 of the above regulations are key in that they prescribe the operating parameters of all processing plants and equipment, e.g., adequate fly screening/doors; cleaning of walls and floors (disinfectant < 50ppm chlorine); chill room and freezers minimum temperatures (3°C and minus 18°C respectively); protection regarding handling of fish; sanitary requirements; and for Class C establishments – no flies, rats or vermin.

### **B.13.3 Vessel Licensing**

The Fisheries Ordinance 1978 establishes a licensing system applicable to both local and foreign fishing vessels<sup>21</sup>. No vessel can be used for fishing in the Kiribati fishing zone<sup>22</sup> unless authorized to do so by the competent authority.

No foreign fishing vessel may enter the Kiribati EEZs, except under international law; nor can they carry out fishing or attempted fishing; loading, unloading or transshipping of fish, supplies or fuel, unless authorized by a permit granted by the Chief Fisheries Officer with approval of the Minister.

Permits for foreign fishing vessels are issued by the Chief Fisheries Officer, with the approval of the Minister, upon payment of such fees and royalties as may be determined. They are subject to such general conditions as may be prescribed and to such further conditions as may

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<sup>21</sup> The Fisheries Ordinance 1978 provides definitions of the notions of local fishing vessel and foreign fishing vessel. The former is defined as "any fishing vessel wholly owned and controlled by – (a) the Government of Kiribati; (b) a company, society or other association of persons incorporated or established under the laws of Kiribati, at least 49% of which is beneficially owned by citizens or the Government of Kiribati; (c) citizens of Kiribati; or (d) a joint venture, a consortium or partnership arrangement or agreement between two or more parties, where at least 49% of the beneficial ownership and control of the joint venture, consortium or partnership is vested in or held by citizens or the Government of Kiribati". The latter reads as follows: "any fishing vessel that is not a local fishing vessel".

<sup>22</sup> Note that legislators have used the terminology "fishery limits" to designate the fishing zone in the Fisheries Ordinance 1978. To avoid any misinterpretation or confusion, reference to the fishing zone will be made in this section.

be endorsed thereupon by the Chief Fisheries Officer. A permit does not confer on the beneficiary any exclusive right to fish unless the permit expressly so provides. A permit is also required for any foreign fishing vessels intending to: (a) load, unload or tranship any fish within the fishing zone; or (b) load, unload any fuel or supplies within the fishing zone. It is important to note that for the purposes of the Fisheries Ordinance 1978 the term “fishing vessel” should be construed as including support vessels and crafts as well as helicopters and light aircrafts used in fishing operations.

The permit so granted shall be subject to such conditions on the permit and those additional conditions as prescribed by the Chief Fisheries Officer and the payment of such fees or royalties as agreed in the Access Agreements.

The permit does not grant any exclusive rights to fish unless so noted on the permit; all prohibited fishing gear is to be stowed where it cannot normally be used for fishing and also so stowed in transiting any closed or prohibited fishing areas.

All other conditions of fishing for foreign fishing vessels are contained in the Access Agreements<sup>23</sup> that is essence form a separate set of regulations for foreign fishing activities.

#### **B.13.4 Conservation and Management Measures**

Principal fisheries conservation and management measures applicable in the waters under the sovereignty or jurisdiction of Kiribati entail the following:

- it is prohibited to take fish in any sea or lagoon area or on any reef forming part of the ancient customary fishing ground of any *kainga*, *utu* or other division or subdivision of the people, except for members of the local communities or under the authority of a special licence granted by the Minister (Fisheries Ordinance 1978);
- fishing is prohibited in the Azur Lagoon, Pelican Lagoon, Isles Lagoon and the Tongan Channel and the adjoining Artemia Ponds (Prohibited Fishing Areas (Designation) Regulations 1978);
- it is prohibited to catch, take, kill, possess, sell, expose for sale, buy for sale or consign to any person for the purpose of sale any immature rock lobster (individual whose carapace length is less than 85 mm measured from the eyes) or any female rock lobster bearing eggs (Fisheries Conservation and Protection (Rock Lobsters – *Panulirus* Species) Regulations 1979).

#### **B.13.5 Offence and Penalty Scheme**

The various offences and related penalties are shown in Table 29 overleaf.

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<sup>23</sup> Nowhere in the standard agreements a statement is a statement seen whereby all foreign fishing vessels and personnel associated therewith (Captain/Master, crew, appointed agents, etc.) must comply with Kiribati Fisheries Laws and Regulations. If this is not addressed through other means, it is strongly recommended that it be included as a statement in all access agreements, especially for powers of Authorized Fisheries Officers, etc.

**Table 29: Kiribati: Fisheries Offences and Penalties**

<b>OFFENCES</b>	<b>PENALTIES (maximum penalties that can be imposed)</b>
Use of a local fishing vessel within the fishing zone or in the lagoon of Kiribati without a licence	Fine of \$1,000 and imprisonment for a term of 3 years
Fishing or attempting to fish by means of a foreign fishing vessel within the fishing zone without a permit	The fishing master and master of the foreign fishing vessel shall each be liable on conviction to a fine of not less than \$20,000 but not more than \$100,000 and in default to a term of imprisonment of 1 year. The owner and charterer of the foreign fishing vessel shall each be liable on conviction to a fine of not less than \$100,000 but not more than \$500,000 and in default to a term of imprisonment of two years.
Use of a foreign fishing vessel to load, unload or tranship any fish within the fishing zone without a permit	The fishing master and master of the foreign fishing vessel shall each be liable on conviction to a fine of not less than \$20,000 and not more than \$100,000 and in default to a term of imprisonment of 1 year. The owner and charterer of the foreign fishing vessel shall each be liable on conviction to a fine of not less than \$100,000 but not more than \$500,000 and in default to a term of imprisonment of two years.
Use of a foreign fishing vessel to load, unload any fuel or supplies within the fishing zone without a permit	The fishing master and master of the foreign fishing vessel shall each be liable on conviction to a fine of not less than \$20,000 and not more than \$100,000 and in default to a term of imprisonment of 1 year. The owner and charter of the foreign fishing vessel shall each be liable on conviction to a fine of not less than \$100,000 but not more than \$500,000 and in default to a term of imprisonment of two years.
Failure by an unlicensed foreign fishing vessel to stow its gears while in the fishing zone	The fishing master and master of the foreign fishing vessel shall each be liable on conviction to a fine of \$50,000 and in default to a term of imprisonment of 6 months. The owner and charterer of the foreign fishing vessel shall each be liable on conviction to a fine of \$100,000 and in default to a term of imprisonment of 1 year.
Failure by a foreign fishing vessel to maintain a fishing log book	The fishing master and master of the foreign fishing vessel shall each be liable on conviction to a fine of \$50,000 and in default to a term of imprisonment of 6 months

<b>OFFENCES</b>	<b>PENALTIES (maximum penalties that can be imposed)</b>
Breach of any condition of a permit issued in respect of a foreign fishing vessel	The fishing master and master of the foreign fishing vessel shall each be liable on conviction to a fine of \$50,000 or the owner and charterer of the foreign fishing vessel shall each be liable on conviction to a fine of \$100,000
Operation of any fish processing establishment without a licence	Fine of \$200 and imprisonment for a term of 6 months
Obstruction of authorized officers or failure to comply with any lawful requirements imposed or to answer any lawful enquiry made by an authorized officer	Fine of \$200 and imprisonment for a term of 6 months
Throwing overboard or destroying incriminating evidence	Fine of \$1,000 and imprisonment for a term of 5 years
Possession or control of or fishing with explosives, poison or other noxious substances	Fine of \$200 and imprisonment for a term of 6 months
Taking fish in any sea or lagoon area or any reef forming part of an ancient customary fishing ground without special authorization to do so	Fine of \$200 and imprisonment for a term of 6 months
Breach of any regulation made under section 22 of the Fisheries Ordinance	Fine of \$1,000 and imprisonment for a term of 6 months

OFFENCES	PENALTIES (maximum penalties that can be imposed)
Fishing in any fishing prohibited area established under Prohibited Fishing Areas (Designation) Regulations 1978	Fine of \$1,000 and imprisonment for a term of 6 months
Taking of immature rock lobsters or female rock lobsters bearing eggs	Fine of \$100 and imprisonment for a term of 3 months

### B.13.6 Ministry of Fisheries and Marine Resources Development

MFMRD is responsible for the definition of fisheries policy in Kiribati. The organisation chart is shown in Figure 24. The Ministry of Fisheries has a staff of about 115. The Ministry is the focal point of contact for the FFA and SOPAC for Kiribati and maintains professional contact with the Food and Agriculture Organisation of the UN (FAO) on improving food security in general, with the OFCF (a non-Governmental Japanese Organization) on maintenance of ice-plants and other equipments donated from the Government of Japan and with various fishing companies or consortiums or reps such as the EU who fish in our EEZ. The Ministry liaises closely with local NGOs, Island councils to carry out researches aimed at maintaining and enhancing our marine resources both in the high seas and around our coasts. The Ministry represents the country in SOPAC and FFA meetings, relevant FAO meetings, the International Seabed Authority and the newly established Tuna Commission for the Western and Central Pacific Ocean.

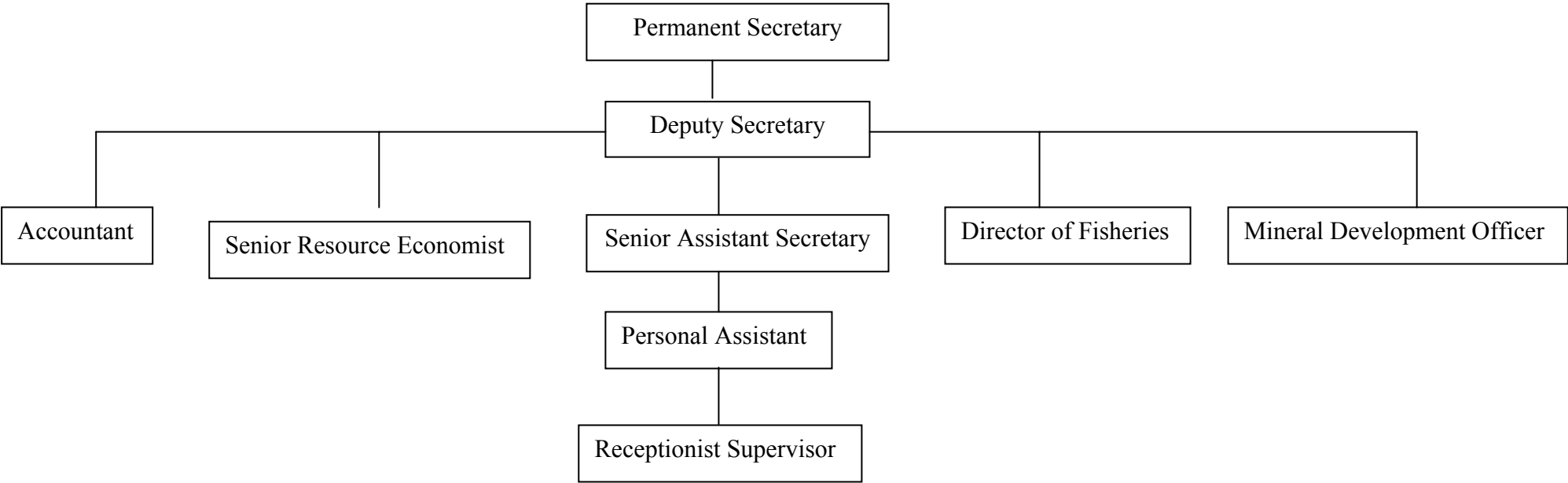
The Administration (Policy Resource and Development) provides the management services that ensure planned results of the ministry are achieved. Its services include policy and planning, statistics, progress monitoring, asset maintenance, financial and human resource management. Generally the Administration will contribute to all Key Policy Areas identified in the NDS and which are relevant to the Ministry.

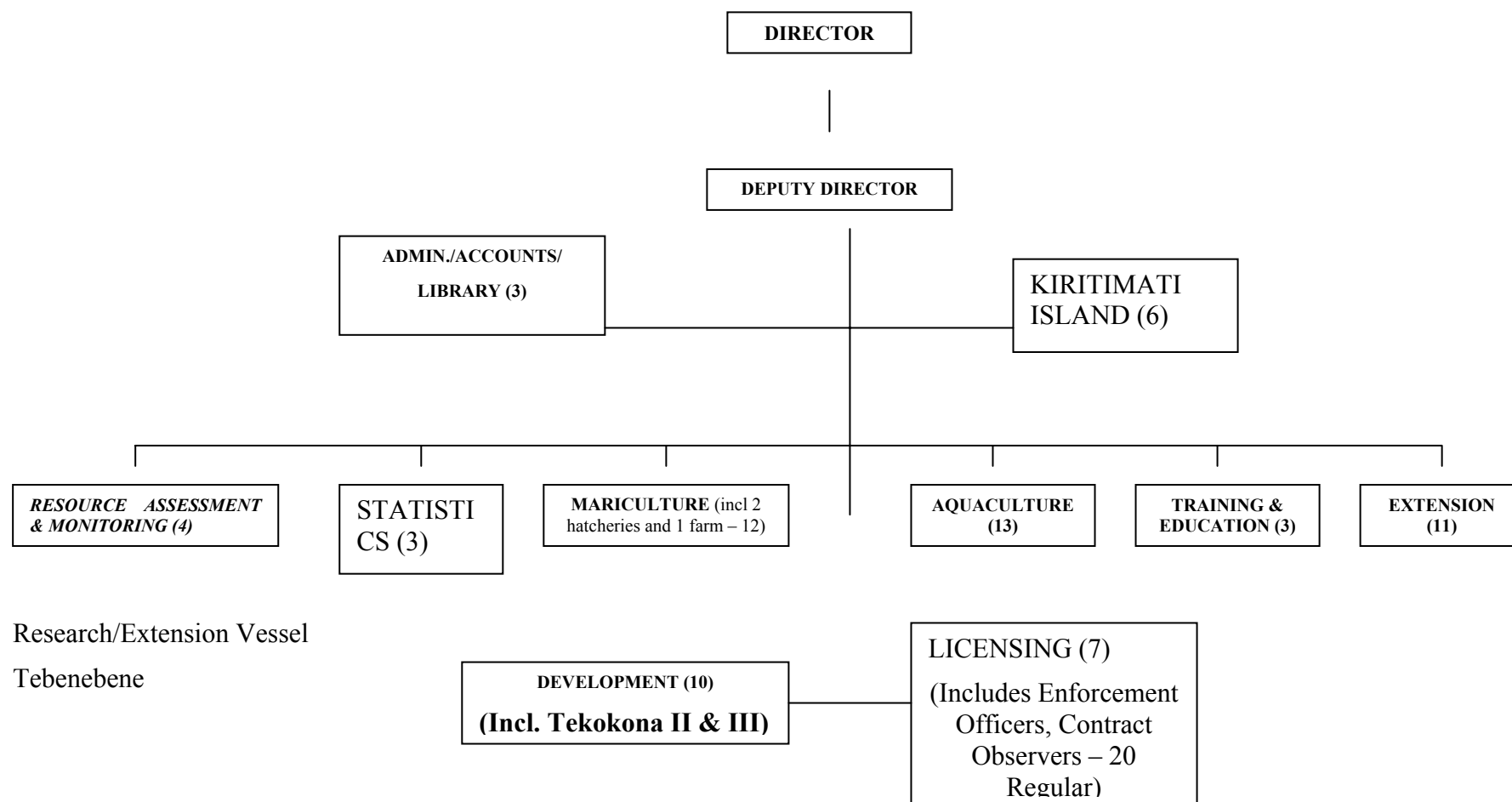
The Mineral Unit (Management of Mineral Resources) provides the services that protect beach erosion through advice on the best alternative mining site for aggregates for building materials and analysis of collected data. It also provide advice on the mineral resources available in Kiribati for developmental and research purposes. The program contributes to KPA 2 (Sustainable use of Physical resources).

### B.13.7 Fisheries Division

The Fisheries Division (FD), under the auspices of the MFMRD, is specifically responsible for the exploration, exploitation, development, utilization, proper management and conservation of fisheries and marine resources encompassed within the EEZ. The long-term goal of the division is to maximize returns from these resources and ensures that resources are being utilized on a sustainable basis to ensure the attainment and continued satisfaction of human needs for the present and future generations of Kiribati. The FD consists of a number of units (see figure 25). Discussion indicates on-going consideration of restructuring to align the work of FD more closely with developmental priorities. FD has a small research vessel, which is also used to transport personnel and carry fish from the islands.

Figure 24: MFMRD: Organisation Chart



**Figure 25: Fisheries Division: Organisation Chart**

Statistics: the Fisheries Statistics unit concentrates in the collection and analysis of relevant fisheries data from the artisanal sector. Data collected are primarily from the commercial and subsistence fishermen where they fish mainly in the lagoon, reef and the ocean areas. The ocean area is limited to the distance artisanal fishermen can venture and could be as far as 12 nautical miles from the shore. Other data of equal importance are also compiled from the private fishing enterprises, fish and marine exporters that export their product overseas, marine products send from the outer islands to Tarawa and marine products send overseas as personal consignments.

Resources Assessment and Monitoring: the unit is responsible to conduct stock assessment surveys on marine resources, monitoring work on certain marine species and monitors ciguatera. The unit works with SPC on *ad hoc* resource evaluations for reef and lagoon fish.

Mariculture & Aquaculture: the objectives are to conduct research on marine resources that have potential for development and to coordinate collaborative research activities with regional research organisations. Past and current research activities include:

- The Seaweed Growth Monitoring Programme, which investigates *Eucheuma* seaweed growth rates at various locations and under various conditions with the aim of determining optimum sites and seasonality for farming;
- Monitoring of the beche-de-mer fishery, including plans to investigate the potential to culture some commercial species;
- Giant Clam Stock Assessment, including plans to investigate the potential for farming.
- The Pearl Oyster Collaborative Project, which is funded by the Australian Centre for International Agriculture Research, is investigating the potential for developing Kiribati's black-lipped pearl oyster resources with the longer-term view of establishing commercial pearl farming.

Past research has included studies of deep-bottom fish, deep-water prawns, tuna baitfish, pelagic fish species in the Line Islands, and other resources. The Division's Aquaculture Unit is also involved in research aimed at eradicating tilapia from the Tarawa milkfish ponds.

Training & Extension: the main objectives of the unit are to conduct and organise fisheries training for the fisheries staff both internally and at overseas institutions including training fishermen in the rural areas in the form of workshops. In addition, the unit is also dissemination of fisheries related information to the general public in the form of posters, pamphlets, radio announcement and videos.

Economic and Development: traditionally, the unit has established and monitored projects such as the development of FAD fisheries, long line fishing trials. More recently, it assists This is a new section established to assist project formulation from all Fisheries units. Concerning these tasks this section currently deals with collection and formulation of projects requirements from Fisheries units and other projects identified priority for further submission to authorities concerned to secure fund and implementation. Through project formulation this section would work closely to accommodate socio-economic needs by fishing communities and governments' priorities.

Licensing and Enforcement: the main objectives of the unit are to generate revenue from Kiribati marine resources through fishing access, to generate employment for young boys on fishing vessels, manage the marine resources on a sustainable basis, and to carry out enforcement duties to protect the country's marine resources.

To achieve these objectives the FLEU was tasked to carry out and to accomplish the following undertakings:

- Securing of fisheries access agreements with foreign partners,
- Promoting of employment opportunities on foreign fishing vessels,
- Cooperating in monitoring, control and surveillance at regional and national level,
- Maintenance of the Unit's fisheries database management information system, simply know as FMIS,
- To carry out observer placements on foreign vessels to carry out scientific data collection on catch and gear technology,
- To carry out port sampling work to verify catches made by fishing vessels, and disseminating of information.

Kiritimati Branch: the Branch inputs into the work of FD by monitoring of the fish resources through the collection of relevant fisheries data and surveys, monitoring of the export activities through the collection of fisheries data and issuance of licenses, promote the utilisation of marine products in a sustainable manner, Provide assistance to local fishermen in the development of the fisheries on the island, Monitoring of trans-shipment activities and Monitoring and surveillance of Fisheries ponds and closed areas.

### **B.13.8 State Controlled Enterprises**

The State Controlled Enterprises (SOEs) linked to MFMRD are:

- Central Pacific Producers Limited
- Atoll Seaweed Company
- Kiribati and Otoshiro JV

The Ministry appoints a board to supervise and oversee the operation of the first two companies with respect to Government policy and aspirations. The Minister who is the nominal major shareholder on behalf of the Government appoints board members. The board members are selected from the civil society, NGO or Civil Service with the Chair usually a senior staff of the ministry selected from the Ministry.

### **B.13.9 Training**

Marine and fishery sector training in Kiribati is aimed mainly at enabling Kiribati citizens to find overseas employment on cargo or fishing vessels. The Kiribati Marine Training Centre (MTC) was established in the late 1970s in partnership with a commercial shipping agency to provide training for merchant seamen. For several years MTC also offered a training programme aimed at the fishing sector but this function has now been taken over by the Fisheries Training Centre (FTC), which was established in 1989 with Japanese aid support. The Centre currently trains up to 72 crew a year to the standards of discipline and safety required by Japanese fishing vessels. The graduates of the school are then placed by Kiribati Fisherman's Services (KFS) Ltd., a company which is 99% owned by the Federation of Japan Tuna Fisheries Cooperative Associations, and which acts as an employment agency for this purpose. The activities of FTC and KFS are closely and actively coordinated. So far the Centre has trained 1,075 people.

A certain amount of academic-level training in marine resources is available in Kiribati via the Atoll Research Centre, which is affiliated with the University of the South Pacific, as well as through USP's Kiribati Extension Centre.

## **B.14 FISHERY POLICY FRAMEWORK**

### **B.14.1 The National Strategy**

The approach to policy development is through a multi-sector development strategy, which defines key policy areas, associated strategies, key activities and responsible Ministries. Table 30 identifies the Policy Areas related to fisheries.

Main fisheries policies are:

- Tuna: Need to maximise sustainable economic benefits from the tuna resource.
- Other fisheries: Need to conserve stocks of vulnerable species in face of rising demand for food and cash incomes.
- Mariculture: managing the transition from government research to commercial production and export.

Other policy areas emphasise the need for:

- Private commercial investment is needed in marine and mineral resources and tourism.
- Strengthen agricultural and fisheries extension service
- Identify most promising income-earning opportunities in outer islands and demonstrate commercial feasibility
- Identify participatory development strategies to manage increasing risk and design cost effective adaptation

### **B.14.2 Ministry Annual Plan**

Each year, each Ministry produces an up-date on activities and how these are contributing to the achievement of the priorities. The log frame matrix for individual divisions with MFMRD are provided in Appendix E. Highlights of interest to the contents of this report and the upcoming negotiations are the following.

#### **B.14.2.1 Fisheries Division**

- i. Improved knowledge on Black-lip Pearl Oyster Culture
- ii. Transition from pearl research to pearl commercialisation
- iii. Coral Cultures established to target Ornamental Aquarium Trade
- iv. Private Enterprises encouraged and promoted to develop tuna processing and other marine based products
  - Local fish processors trained fish processing techniques. Workshops will be carried out this year.
  - Next phase development is being considered with CPP Tuna Processing Project.
- v. Extend grow-out trials of pearl oyster to other islands
- vi. Technology on building fibreglass & pump-boats

**Table 30: Kiribati: Fishery Related Elements of NDS 2004 - 2007**

Key Policy Area MFMRD Role	Strategy	Key Activities
<b>Economic Growth</b>		
Private commercial investment is needed in marine and mineral resources and tourism. MFMRD Lead Ministry	Promote new research based investment openings for private capital (including partnerships and contracting out activities) and invite private investment in GoK owned enterprises.	Black pearl research / piloting. Market commercial investment opportunity in tuna processing.
Rural production has been declining MFMRD Support Ministry	Strengthen agricultural and fisheries extension services, stabilise producer prices, motivate private enterprise in processing and marketing.	Establish formal funding basis for price stabilisation and support, define performance requirements of relevant public enterprises and focus efforts on production.
<b>Equitable Distribution</b>		
Infrastructure Services and Incomes on Outer Islands are inferior to those in Urban areas. MFMRD Support Ministry	Identify most promising income-earning opportunities in outer islands and demonstrate commercial feasibility	Strengthen economic and social statistics
<b>Environment</b>		
Potential social and economic impact of climate change is costly and dangerous. MFMRD Support Ministry	Identify participatory development strategies to manage increasing risk and design cost effective adaptation	
<b>Marine Resources</b>		
Tuna: Need to maximise sustainable economic benefits from the tuna resource. MFMRD Lead Ministry	Maintain close collaboration with FFA and other PIC coastal states to obtain maximum sustainable EEZ access fees.  Promote public-private partnerships with reputable foreign investors in catching and on-shore domestic processing of tuna.	Continuous  Engage potential investors in feasibility studies with independent assistance in appraisal of projects.
Other fisheries: Need to conserve stocks of vulnerable species in face of rising demand for food and cash incomes. MFMRD Lead Ministry	Conduct participatory educational programmes with fishers and communities engaged with vulnerable species / stocks.  Ensure legal sanctions are adequate to enforce conservation regime and prosecute where necessary.	Continuous  Continuous
Mariculture: managing the transition from government research to commercial production and export. MFMRD Lead Ministry	Advertise investment opportunities based on research and pilot projects.  Promote FDI and local private investment with no GoK participation, but subject to strong resource management and conservation oversight.	Periodic advertisements in journals and on internet.

- vii. Trial on post larval stage culture of potential marine species
  - Identify at least 3 potential species for development
  - Initiatives of trial on post larval culture of potential marine species eg lobsters, shrimp, finfish (emperors, groupers) are the current target of Ambo Aquaculture to be commenced by Mar-May
- viii. Commercialising Government owned fish ponds
- ix. Transfer of relevant fishing method, and other post harvest and processing methods to rural fishers
  - At least organizing a fishermen training on FADs, transfer of fishing technology, fish handling & safety at sea
  - Training conducted on islands in the Gilbert Group, Line and Phoenix Group.
- x. Facilitate and support seaweed farming on the outer-islands
  - Successful farming units on at least 2 islands where seaweed farming is reintroduced.
  - Production increase by at least 5% for the Gilbert Group
  - Exploring and researching other seaweed species that might have potential commercial values and existing markets overseas
- xi. Ensuring food security on the outer-islands
  - Fish is available in times of abnormal weather patterns
  - Identify funds for FADs project
  - Outboard training to fishermen on target islands
  - Rehabilitation of at least one Outer Island fish ponds
  - Supplying ice makers & ice plants to outer island fish center
- xii. Facilitate processing and marketing of outer island catch.
  - Establishment of 4 fish centers on the southern Gilberts, i.e Beru, Onotoa, Tamana & Arorae Island early this year
  - Establishment of at least 2 fish centers on the Northern Gilberts
- xiii. Facilitate trial collection of fresh fish from outer islands
  - CPPL commissioned to provide the service
  - An alternative shipping company is identified
  - Supporting collection of fish from the outer-islands will carry out at least 2 runs from selected islands
  - Encouraging local shipping companies to supply fish from nearby Fish centers as needed to CPPL
- xiv. Facilitate joint venture operations in the harvest and processing of tuna resources
  - At least 2 interested foreign investors registering interest with the Ministry
  - Inclusion of JV initiatives in the agenda for access negotiations
- xv. Facilitate private commercial investment in marine resources

- xvi. Facilitate private commercial investment in marine resources
- xvii. Provide hatchery produced seeds to interested entrepreneurs for commercial and domestic trials
- xviii. Review Fisheries Act
  - Workshop conducted, March, 2005. Still awaiting for the full report from FAO Consultant who conducted the Workshop.
- xix. Facilitate the proliferation of Community-based Management through inputs and outputs controls.
  - Plans for implementation by communities experiencing decline in certain fish species
- xx. Attend and participate in invitations to Regional meetings and international forums on Pelagic fisheries and help promote Kiribati interest both in developing offshore fishery as well as managing the fishery in these fora.
- xxi. Solicit support from PNA member countries and FFA in our quest to maximise sustainable development of our marine resources

#### **B.14.2.2 Fisheries Licensing and Enforcement Unit**

- i. Maximize revenue from access fees
  - Fee level either maintained or increased per fishing vessel every license period
- ii. VMS register maintained
  - VMS data downloaded twice daily am/pm to locate vessels position in the Kiribati EEZ
- iii. Registration and Licensing of Foreign fishing Vessels
  - Issuance of license permits to foreign fishing vessels two days after receiving application forms
- iv. Observers coverage improved
  - Observer placement increased by 5 % from previous level. End of the year the target is 20% observer coverage of all vessels fishing in the Kiribati EEZ.

#### **B.14.3 Draft Tuna Fisheries Plan**

##### **B.14.3.1 Introduction**

The last government of Kiribati presented a “Kiribati Tuna Development and Management Plan” prepared by a Tuna Task Force appointed in October 1999 to address the development and management of the tuna industry for Kiribati. The Tuna Task Force led by MFMRD worked on an inter-ministerial task level with the tuna fishers, the private sector, and the Development Bank of Kiribati to identify the issues and stumbling blocks to the development of an international tuna industry in Kiribati with exports to the two largest markets, Japan and the USA. In addition, the FFA, with funding from the Canadian International Development Agency’s Canadian South Pacific Ocean Development Project, provided consultant assistance to develop the plan.

*Whereas the new government has not taken up the plan, analysis of it highlights I-Kiribati strategy to develop their interest in tuna fisheries.*

### **B.14.3.2 Objectives**

The objective of the Kiribati Tuna Development and Management Plan was to address:

- i. Development of a sustainable tuna industry thus maximizing the benefits to all Kiribati citizens, investors, and fishers;
- ii. The regional, international agreements and commitments to which Kiribati is, or about to become a party;
- iii. Preparation for Kiribati to take its prominent place in the future development of the WCPF, noting the significant catches taken within its EEZs.
- iv. Development of an appropriate infrastructure to support a sustainable tuna fishery and ancillary services in the three EEZs of Kiribati within resource constraints;
- v. Development of an appropriate management regime to maximize benefits of the tuna industry to Kiribati citizens including;
  - limitations on catches by effort, and later quotas;
  - controls on foreign and local access for sustainability of the resources;
  - licensing and fees to maximize benefits to each fisher and revenues to the government; appropriate and simplified legislative instruments to accommodate regional and international legal obligations;
  - mechanisms to mitigate and minimize negative social and gender impacts of an expanded tuna industry; and
  - Establishment of a new Fisheries Licensing and Law Enforcement Authority (FLLEA) and subsequent restructuring of MFMRD to take advantage of the benefits of management through such a mechanism.
  - Enhancement of resident and I-Kiribati private sector involvement in the tuna fishing and support industry to reduce the high dependence of government on foreign fishing revenues, and place it on a firmer economic footing.

### **B.14.3.3 Results**

The required result was to bring Kiribati into the tuna fishery as soon as possible in a fairly large way to catch up with other FFC members in the development of its tuna industry. Focus was on the rapid development of the tuna long line fishery for both the small and large-scale sectors to develop a catch history, development of a supporting infrastructure, and further, development of an appropriate legislative and management base for such activities. In the medium term, the provision of appropriate supporting infrastructure for trans-shipment and servicing centres in the EEZs; and moving to greater involvement in processing and large scale purse seine fishing in the longer term.

### **B.14.3.4 Strategy**

Elements of the defined strategy included the following.

- i. Addressing markets, production standards (HACCP and EU standards), and transport requirements. The ability to address the social and employment issues would also have a considerable cultural and peace and security impact on the acceptability of the expansion of the tuna industry in Kiribati.
- ii. Promotion of the private sector to assume a developmental role in the tuna industry to counter the current “malaise” in the private sector to remove any roadblocks to their involvement, create a level playing field, and encourage their full participation in the building of the new tuna industry.

- iii. Place greater priority on the development of the small and large-scale tuna fisheries and fishing industry to benefit Kiribati. Development initiatives should be in parallel both the small scale long line fishery as support to the artisanal, and small scale commercial fishers in the coastal areas; and the larger scale long line fishery using foreign charters, joint ventures and special management areas to rapidly build a Kiribati presence in the EEZs and beyond on the high seas within the WCPF. The Development Bank will move to assist the small scale long line sector and in fact have been, and are still involved in two pilot vessel design operations with Kiribati fishers, one in Tarawa and one in Kiritimati Island.
- iv. Maximize government revenues from foreign fishing while investigating avenues to place the revenues on a more stable footing will require careful study and negotiations, minimize waste and misreporting, while also using the resource base to encourage greater local involvement in the sector. The attractiveness of access to Kiribati waters is growing annually as other areas are at maximum fishing levels. The allocation of quotas on the high seas in the WCPF Convention Area will further add to the attractiveness of access to Kiribati waters and provide opportunities to increase fishing access fees. These steps will serve to place fishing revenues on a stable footing for the future.
- v. Ensure economic and resource sustainability, by maintaining resource harvesting at a level near the maximum sustainable yield of the fisheries using the precautionary approach to set TACs with respect to the percentage of stocks and biomass within the totality of Kiribati waters, including those areas where biomass is present, but due to oceanographic conditions is not yet fished, and maximize revenues, and minimize waste from these resources. Kiribati will also seek to support regional action to implement precautionary measures by new members of WCPF that are currently adopting relatively uncontrolled fishing strategies, e.g., Philippines and Indonesia. This will be to minimize the negative impacts of their uncontrolled overfishing on other areas and members of the WCPF Commission.
- vi. Address key areas of focus in the National Development Strategy, e.g., unemployed youth; enhanced secondary education and vocational training; enhanced involvement of the private sector; and take steps to minimize the social and cultural impacts of a developing industry, the latter necessary to ensure peace and security for Kiribati.
- vii. Identify areas for future economic development.
- viii. The establishment of the Fisheries Licensing and Law Enforcement Authority, and
- ix. To provide a holiday for import tariffs on all materials that would assist in the development of the tuna industry. These two initiatives are currently being processed through the government system as the plan is being further developed.

## **B.15 FISHERIES SECTOR FINANCE AND BUDGETS**

### **B.15.1 MFMRD Budget**

As noted in Section 1, the national budget is sourced from two elements – the budget to cover recurrent costs appropriated from Parliament, and a development budget covered to a large part by donor contributions.

As shown in Table 31, the total appropriated budget for MFMRD in 2006 is A\$1.88 million (€1.15 million), an increase of A\$122,000 (€75,000) over 2005. This increase was mainly due to salaries. The budget was allocated between departments as: administration (39 %), fisheries (39 %), licensing (19%) and mineral resources (3 %).

Table 32 indicates that in 2005, 19 projects received development funding to a value of A\$6.7 million (€ 4.11 million). The biggest elements were the observer project fund, the seaweed project and the Kirimati fisheries centre. At the time of budget preparation, a number of new projects remained unfunded for 2006. Table 33 shows the proposed breakdown of the MFMRD development budget in 2006 by subject and region. In contrast to the national budget, fisheries and mining shows greater emphasis on business development and South Tarawa.

### **B.15.2 Income from Foreign License Fees**

#### **B.15.2.1 Importance**

As noted in Section A, the fees paid by foreign fishing vessels are the main component of government revenue, the A\$28 million (€17.2 million) raised in 2005 represent 46 % of total revenue and 91 % of non tax revenue. The budgeted amount for 2006 is the A\$31 million (€19.1 million). These funds enter the general account. Hence, license fees received from EC vessels has entered this account, but there has been some debate about the destination of financial compensation with the delay in applying for reimbursement of finance for targeted measures (see Section C) due to the change from the general account (No. 1) to the development fund (Number 4). However, targeted actions do not figure in the projects listed in the development fund account.

**Table 31: Budget: Ministry of Fisheries and Marine Resource Development**

	<b>Total Budget (A\$'000)</b>			<b>MFMRD Budget (A\$'000) '06</b>			
	<b>2005</b>	<b>2006</b>	<b>Difference</b>	<b>Admin</b>	<b>Fisheries</b>	<b>Licensing</b>	<b>Mineral Res.</b>
KPF Contribution	\$54	\$62	\$8	\$14	\$24	\$20	\$3
Salaries	\$725	\$823	\$98	\$197	\$315	\$271	\$39
Housing Assistance	\$13	\$27	\$14	\$22	\$0	\$0	\$4
Allowances	\$42	\$41	-\$1	\$10	\$28	\$3	\$1
Overtime	\$47	\$57	\$10	\$16	\$35	\$7	\$0
Temp. Assistance	\$28	\$22	-\$6	\$15	\$4	\$3	\$0
Leave Grants	\$36	\$38	\$2	\$8	\$25	\$4	\$1
Sub Total	\$945	\$1,070	\$125	\$282	\$430	\$309	\$49
Transport to Work	\$39	\$42	\$3	\$10	\$32	\$0	\$0
Internal Travel	\$163	\$142	-\$21	\$87	\$45	\$6	\$4
External Travel	\$155	\$145	-\$10	\$84	\$31	\$24	\$6
Local Purchases	\$73	\$79	\$6	\$32	\$39	\$8	\$2
Entertainment	\$11	\$13	\$2	\$13	\$0	\$0	\$0
Overseas Purchases	\$42	\$46	\$4	\$8	\$29	\$3	\$6
Local Services	\$45	\$45	\$0	\$15	\$28	\$2	\$0
Cleaning	\$0	\$2	\$2	\$2	\$0	\$0	\$0
Overseas Services	\$73	\$92	\$19	\$92	\$0	\$0	\$0
Hire of Plant	\$62	\$62	\$0	\$31	\$31	\$0	\$0
Telecomms	\$69	\$69	\$0	\$36	\$33	\$0	\$0
Elec & Gas	\$60	\$60	\$0	\$32	\$29	\$0	\$0
Water	\$7	\$7	\$0	\$1	\$6	\$0	\$0
Recruitment Expenses	\$1	\$1	\$0	\$1	\$0	\$0	\$0
Local Training	\$1	\$1	\$0	\$1	\$0	\$0	\$0
Building Maint.	\$5	\$0	-\$5	\$0	\$0	\$0	\$0
Computer Equip.	\$4	\$0	-\$4	\$0	\$0	\$0	\$0
Sub Total	\$810	\$807	-\$3	\$445	\$302	\$43	\$17
<b>Grand Total</b>	<b>\$1,755</b>	<b>\$1,877</b>	<b>\$122</b>	<b>\$728</b>	<b>\$733</b>	<b>\$351</b>	<b>\$66</b>
<b>€ ' 0000</b>	<b>€1,077</b>	<b>€1,152</b>	<b>€75</b>	<b>€447</b>	<b>€436</b>	<b>€215</b>	<b>€40</b>

**Table 32: Development Fund Budget: MFMRD**

				<u>Actual (A\$)</u>	
				<u>2005</u>	<u>2006</u>
<b>Funded</b>	<b>Donor</b>	<b>Project</b>	<b>Total Budget</b>		
	NZ	Fishing Gear Revolving	\$63,035	\$0	\$0
	NZ	Pearl Oyster Project Research	\$249,964	\$37,766	\$0
	Aust	Prod. Of Safety at Sea	\$18,827	\$0	\$0
	GoK	Seaweed Price Subsidy	\$205,000	\$205,000	\$0
	GoK	Tuna Loining Plant Pre-Feas. Study (top up)	\$1,665	\$0	\$0
	GoK	Rabi Councillor Visit	\$25,080	\$19,271	\$0
	Aust	Observer Project Fund	\$1,335,065	\$62,250	\$100,000
	FFA	Scuba Diving Compressor & Equip.	\$27,138	\$0	\$0
	FFA	Fisheries Dev. Asst.	\$200,000	\$0	\$0
	FFA	Strengthening of Fisheries HQ & Kirimati Branch	\$46,396	\$0	\$0
	FFA	Working Capital for Small Fish Processing Plant	\$172,312	\$36,744	\$0
	FFA	National Workshop on Coastal Fisheries leg.	\$6,239	\$0	\$0
	FFA	Tuna Loining Plant Pre-Feas. Study	\$19,007	\$17,836	\$0
	Jap	Fisheries Centre for S. Kiribati	\$76,050	\$1,120	\$0
	Jap	Onotoa Ice machine	\$115,198	\$114,339	\$0
	France	Water Resources Banaba	\$112,558	\$30,681	\$0
	Jap	Fisheries Centre Kirimati	\$1,500,000	\$0	\$0
	France	Feas. Study for remain. Phos. Dep	\$109,994	\$0	\$0
	EU	Seaweed Dev. Prog. (Phase ii)	\$2,400,000	\$0	\$115,000
			<b>\$6,683,528</b>		
			<b>(€4,100,000)</b>		
<b>Unfunded</b>		Shallow Water FADs	\$124,117		\$124,117
		Tarawa Aggregate Extraction - Pilot Study	\$1,559,250		\$1,559,250
		Fisheries Asst Training Course	\$49,708		\$49,708
		Asst to Kiribati Fish Conserv.	\$96,913		\$96,913
		Mar. Res. & Env of Gilbert Group	\$57,395		\$57,395
		Tamana Fish Centre	\$76,050		\$76,050
		Arorae Fish Centre	\$76,050		\$76,050
		Feasibility Study on Milk Fish canning	\$42,000		\$42,000
		Socio Econ Survey (Artisanal Fish)	\$15,810		\$15,810
		Tuna Long Line	\$55,133		\$55,133
		Tekokana II	\$10,690		\$10,690
		Hatchery & Growth	\$48,142		\$48,142
		Sea Cucumber Hatchery Activities	\$16,875		\$16,875
		Mechanical Workshop Activities	\$31,206		\$31,206
		Extension Unit	\$3,986		\$3,986
		Fish Educ. & Training Inf. Unit	\$49,980		\$49,980
		RAMM	\$16,202		\$16,202
			<b>\$2,329,507</b>		<b>\$2,329,507</b>
			<b>(€1,400,000)</b>		

**Table 33: MFMNR: Development Fund Budget By Sector: 2006**

By Area	<u>MFMNR</u>		<u>National</u>	
	<u>A\$</u>	<u>%</u>	<u>A\$</u>	<u>%</u>
Business Development	\$1,816,250	71%	\$3,886,634	5%
Community Development	\$333,612	13%	\$2,451,912	3%
Human Resource Development	\$49,708	2%	\$9,332,326	11%
Infrastructure	\$0	0%	\$48,725,635	60%
Public Administration	\$344,937	14%	\$17,485,277	21%
	\$2,544,507		\$81,881,784	
<b>By Region</b>				
National	\$684,054	27%	\$25,704,450	31%
South Tarawa	\$1,608,958	63%	\$29,364,111	36%
Outer Islands	\$209,495	8%	\$23,876,462	29%
Line & Phoenix	\$42,000	2%	\$2,936,761	4%
	\$2,544,507		\$81,881,784	
	(€1,560,000)		(€50,230,000)	

**B.15.2.2 Comparative Analysis**

Table 34 illustrates that Kiribati has been the most successful of the Pacific Island Countries (PICs) in gaining revenue from foreign fishing effort within its EEZ.

Tables 35 and 36 provide data license payments by individual DWFNs to specific countries. In 1999, Korea was the major source of income to Kiribati (US\$6.7 million) (€7.3 million), This was followed by USA (US\$6.4 million) (€7.0 million) (with payments through the multi national treaty administered by FFA.), Japan (US\$5.2 million) (€5.7 million) and Taiwan. (US\$4.1 million) (€4.5 million).

In contrast in 2003, the Korea was the major source of income to Kiribati (US\$7.3 million) (€6.5 million), followed by USA (US\$5.1 million) (€4.5 million), Taiwan (US\$3.8 million) (€3.4 million) and Japan (US\$3.2 million) (€2.8 million).

However, the strongest trend was away the decline in licenses from long liners. It is understood that long line activity in I-Kiribati waters has declined substantially and this trend has been maintained. Apparently, resources have shifted westward.

Table 34: Comparative Incomes of Pacific Island Countries 1999 and 2003.

Country	EEZ size (million km <sup>2</sup> )	Latitudinal range	Historical high tuna catch (~ t)	Access fees 1999 (million \$US)	Access fees 2003 (million \$US)
<b>Category 1</b> <i>Large very productive EEZ, tropical</i>					
PNG	2.24	2°N – 14°S	370,000	5.864	15.712
FSM	2.78	13°N – 1°S	250,000	14.118	(11.084)
Solomon Is.	1.34	4°S – 15°S	120,000	0.273	(1.707)
Kiribati	3.55	9°N – 13°S	350,000	23.711	21.374
Marshalls	2.13	15°N – 5°N	80,000	4.306	(3.322)
Sub-total				48.272 (80%)	53.199 (78.2%)
<b>Category 2</b> <i>Small- medium EEZ, moderately productive, tropical</i>					
Palau	0.63	11°N – 2°N	20,000	0.901	0.688
Nauru	0.32	2°N – 2°S	100,000	3.425	4.462
Tuvalu	0.90	4°S – 13°S	50,000	5.925	6.086
Sub-total				10.251 (17%)	11.236 (16.5%)
<b>Category 3</b> <i>Medium EEZ moderately productive, sub-tropical</i>					
Vanuatu	0.68	13°S – 22°S	6,000	0.328	1.155
Fiji	1.29	10°S – 24°S	15,000	0.212	0.155
Cook Is.	1.83	7°S – 25°S	5,000	0.196	1.442
Tonga	0.70	14°S – 25°S	5,000	0.152	0.247
Sub-total				0.888 (1.5%)	2.999 (4.4%)
<b>Category 4</b> <i>Small EEZ moderately productive, sub-tropical</i>					
Samoa	0.12	12°S – 14°S	8,000	0.189	0.200
Niue	0.39	17°S – 22°S	3,000	0.177	0.147
Tokelau	0.29	7°S – 11°S	15,000	0.499	(0.216)
Sub-total				0.865 (1.4%)	0.563 (0.8%)
<b>TOTAL</b>				<b>60.277</b>	<b>67.999</b>

Source: Lewis

Table 35: PICs: Disaggregated Access and License Fees 1999 (US\$)

	Japan L/L	Japan P/S	Japan P/L	USA P/S	Korea L/L	Korea P/S	China L/L	Taiwan L/L	Taiwan P/S	Other L/L	Other P/S	FSM Arrang P/S	Total
1. Cook Is.	0	0	0	163,814	32,000	0	0	0	0	0	0		195,814
2. Fiji	5,000	0	0	207,187	0	0	0	0	0	0	0		212,187
3. FSM	2,000,000	3,400,000	400,000	303,226	0	2,000,000	200,000	1,800,000	3,900,000	0	100,000	13,461.29	14,118,687
4. Kiribati	1,740,000	3,460,000	0	6,411,107	3,460,000	3,200,000	0	0	4,100,000	0	1,257,000	83,079.86	23,711,187
5. Marshall	870,000	1,560,000	870,000	286,001	0	300,000	0	0	400,000	0	20,000		4,306,001
6. Nauru	0	500,000	0	1,113,802	0	750,000	0	0	1,000,000	0	113,00	61,122.21	3,424,924
7. Niue	0	0	0	151,793	0	0	0	25,000	0	0	0		176,793
8. Palau	450,000	0	0	148,448	0	0	300,000	0	0	0	0	2,438.35	900,886
9. PNG	0	0	0	1,688,553	0	0	0	0	950,000	0	2,816,000	409,724.00	5,864,277
10. Samoa	0	0	0	186,616	0	0	0	0	0	2,000	0		188,616
11. Solomon	0	0	0	265,926	0	0	0	0	0	0	0	7,531.65	273,458
12. Tokelau	0	0	0	491,712	0	0	0	0	0	0	7,000		498,712
13. Tonga	0	0	0	152,041	0	0	0	0	0	0	0		152,041
14. Tuvalu	63,000	279,000	135,000	4,974,352	0	0	0	99,000	292,000	83,000	0		5,925,352
15. Vanuatu	0	0	0	148,448	0	0	0	175,000	0	5,000	0		328,448
<b>TOTAL</b>	<b>5,128,000</b>	<b>9,199,000</b>	<b>1,405,000</b>	<b>16,693,026</b>	<b>3,492,000</b>	<b>6,250,000</b>	<b>500,000</b>	<b>2,099,000</b>	<b>10,642,000</b>	<b>90,000</b>	<b>4,200,000</b>	<b>579,357</b>	<b>60,277,383</b>
<b>%</b>	<b>8.5</b>	<b>15.3</b>	<b>2.3</b>	<b>27.7</b>	<b>5.8</b>	<b>10.4</b>	<b>0.8</b>	<b>3.5</b>	<b>17.7</b>	<b>0.1</b>	<b>7.0</b>	<b>0.9</b>	

NOTE:

- 1) No China P/S at this time
- 2) USMLT PDF shares not included

Source: Lewis

Table 36: PICs: Disaggregated Access and License Fees 2003 (US\$)

	Japan L/L	Japan P/S	Japan P/L	USA P/S	Korea L/L	Korea P/S	China P/S	China L/L	Taiwan L/L	Taiwan P/S	Other L/L	Other P/S	FSM Arrang P/S	Total
16. Cook Is.	0	0	0	485,022		0	0	0	0	0	965,486	0	0	1,441,508
17. Fiji	5,360	0	0	150,060	0	0	0	0	0	0	0	0	0	155,420
18. FSM	1,529,072	2,095,943	679,814	1,100,828	0	2,764,700	394,648	131,400	534,600	2,910,200	800	697,322	769,422	13,608,779
19. Kiribati		3,213,560		5,056,502		7,253,190	363,300	0	0	3,872,680	0	709,170	906,037	21,374,439
20. Marshall	(990,099)	(218,376)	(712,054)	229,523	0	264,000	30,900	0	0	402,000	444,300	75,800	2,444	(2,600,000)
21. Nauru	0	850,843	0	1,615,855	0	1,113,104	0	0	0	1,456,114	0	46,179	230,780	4,462,032
22. Niue	0	0	0	147,322	0	0	0	0	?	0	0	0	0	147,322
23. Palau		0	0	147,322	0	0	0	0	0	0	524,576		16,224	688,122
24. PNG	0	0	0	5,390,139	0	2,421,179	410,598	0	0	3,418,846	0	3,379,638	691,333	15,711,733
25. Samoa	0	0	0	159,200	0	0	0	0	0	0	41,000	0	0	200,200
26. Solomon	0	(300,000)	0	621,102	0	(172,500)		0	0	(162,000)	0	0	451,193	(1,706,795)
27. Tokelau	0	0	0	216,276	0	0	0	0	0	0	0	?	0	(216,276)
28. Tonga	0	0	0	147,322	0	0	0	0	0	0	100,000	0	0	247,322
29. Tuvalu	?	?	?	393,181	0	0	?	0	?	?	?	0	0	(6,086,180)
30. Vanuatu	0	0	0	147,322	0	0	0	0	?	0	?		0	(1,155,000)
<b>TOTAL</b>	2,524,531	6,678,722	1,319,868	16,284,297		13,988,673	1,199,446	131,400	(535,000)	(12,222,000)	(2,075,000)	(5,000,000)	3,067,436	(67,999,074)
<b>%</b>	3.7	9.8	2.0	23.9	0	20.6	1.8	0.2	~ 0.8	~ 18.0	~ 3.1	~ 7.35	4.5	(91.25)

Exchange rates used: NZ \$= 0.64, AU\$ = 0.70, PNGK = 0.29, FS = 0.55, ST= 0.33, VT = .0865

## NOTES:

- 1) USMLT figures for 2002/2003; do not include PDF shares (US\$ 1,778,000)
- 2) To Palau can be added \$451,830 for tuna export tax
- 3) Nauru figures are not disaggregated by gear under each flag; grouped under p/s; longline believed to be minor
- 4) PNG figures incomplete; "other p/s" mostly Philippines vessels
- 5) FSM figures for calendar year 2003, except FSM Arrangement (2003 licensing period)
- 6) Tuvalu total is for 2002, no breakdown available by flag and gear; USMLT figure for 2003
- 7) RMI figures are for 2002/2003
- 8) Data may be missing for Tokelau
- 9) Solomons data – estimated from catch value for Japan, Korea and Taiwan; Japan figures grouped under p/s; 2002/3 data for USMLT and FSM Agreement.
- 10) Contributions by gear and flag do not total 100% because of gaps in the breakdown of access fees by gear for some flags;

### B.15.2.3 Fee Structure

I-Kiribati authorities were understandably reticent to provide the consultant with details of fishery agreements with third parties apart from the EC. There is, however, some indicative historical data available.

Table 37 indicates that fee income is derived from a registration fee, a license fee, an observer fee, a VMS fee and a trans-shipment fee, and there was consideration (within the draft tuna management plan of a development fee). I-Kiribati prides itself on the high level of fees gained from foreign fishing vessels, but it is not known if the data provided in this table approximate to the reality.

The license fee is different according to vessel type (purse seiner or long liner). A big variable however in determining the fee level is the amount of other assistance provided by the representative organisation e.g. infrastructure development. In this respect, it can be assumed that the amount of financial compensation paid by the EC has the effect of reducing the license fee for EU vessels.

**Table 37: Foreign Fishing Fee Structure**

FEE	AMOUNT	COMMENTS
Registration Fee	\$1000/Boat	
License Fee	Variable according to Access Agreement and Other Benefits Received Longliners approx. \$30,000/boat Purse Seiners approx. \$170,000/boat <i>Carrier = \$</i> <i>Tanker = \$</i>	
Observer Fee	\$400/boat/day (?)	Current Observer Fund is adequate (\$800,000)
VMS Fee	\$400/boat	
Trans-shipment Fee	Skipjack = \$2.50/mt Longline (Yellowfin and Bigeye) = \$12.00 mt	
Proposed Development Fee	<i>\$1000/boat</i>	<i>Targeted to large-scale fishery for assistance to small-scale fishers</i>

Source: Reproduced unchanged from Draft Tuna Management Plan.

### B.15.2.4 Income

Table 38 is taken from the Tuna development plan – however there are a number of *in cognitos*, the most important being the reduction from the FFA in 2002. The most likely reason for this is that with the renovation of the US treaty there was a delay in making payment and therefore the 85 % element was not included in the accounts.

In 2000 revenues totalled A\$30.5 million (€ 19.1 million), with relative figures for 2001 and 2002 being A\$46.4 million (€ 26.7 million) and A\$26.1 million (€ 7.5 million). The income from purse seiners was variable, for the three years differing from A\$6.1 million (€ 3.8 million) to A\$16.8 million (€9.7 million) to A\$12.9 million (€7.4 million). In contrast, income from long liners was fairly stable A\$9.6 million (€6.0 million), A\$9.5 million (€5.5 million) and A\$8.6 million (€4.9 million).

Interesting points are the payment by OPAGAC in 2001 (A\$186,000) (€106,900) and the amounts raised from trans-shipment and bunkering.

**Table 38: Summary of License Revenue****Year 2000**

<b>Nos</b>	<b>Type of Vessels</b>	<b>Total Revenue (A\$)</b>
1	Purse seiner	6,094,222.97
2	Pole & Line	68,995.10
3	Longliner	9,556,437.80
4	Bunkering	316,761.85
5	Reefer Carrier	22,435.07
6	Transshipment	13,224.32
7	5% Catch Value (Kaimaki)	588,600.50
8	15% share from FFA	242,157.42
9	85% share from FFA	13,643,219.06
<b>Total</b>		<b>30,546,054.09</b>

**Year 2001**

<b>Nos</b>	<b>Type of Vessels</b>	<b>Total Revenue (A\$)</b>
1	Purse Seiner	16,790,574.23
2	Reefer Carrier	67,547.14
3	Pole & Line	44,834.00
4	Longliner	9,511,691.31
5	Bunkering	486,919.22
6	FFA	310,418.03
7	FFA 15% share	278,669.85
8	FFA 85% share	15,623,068.75
9	Transshipment tax 1997 - 1998 (Taiwan Deep Sea)	167,123.37
10	5% Catch value from Kaimaki	2,882,820.82
11	6% FOB Catch value from Opagac	186,486.96
12	Transshipment Tax (Dongwon)	24,702.84
<b>Total</b>		<b>46,374,856.52</b>

**Year 2002**

<b>Nos</b>	<b>Type of vessels</b>	<b>Total revenue (A\$)</b>
1	Purse seiner	12,865,117.30
2	Reefer Carrier	34,016.61
3	Pole & Line	35,850.70
4	Longliner	8,586,172.95
5	Bunkering	704,454.01
6	Light boat (Frabelle)	2,050.38
7	Transshipment tax	34,943.25
8	15% share from FFA	1,828,902.48
<b>Total</b>		<b>24,091,507.68</b>

### ***B.15.2.5 Future Aspirations***

The fisheries ministry takes its role seriously as the negotiator of the fees that form a major part of the revenue of the I-Kiribati. The stated intention is to increase the proportion of fees as part of the commercial value of the landings, and there are a number of potential mechanisms for doing so.

- i. The VDS scheme provides a substantial opportunity to auction of I-Kiribati allocation to the highest bidder. However, this is unlikely to take place as I-Kiribati remain aware of the need to cultivate international relations in order to maintain the viability of its fragile economy apart from fish. However, certain preferences are possible.
- ii. Preferences will be formed on the basis of a number of parameters;
  - a. the overall compensation to be received by Kiribati (including development aid);
  - b. the assistance provided in developing on-shore fishing activity in the country, especially if Kiribati is the preferred location for new development in the Pacific area; the ability to conform with management regulations and assure the sustainability of the resource.
- iii. Discussion with a representative of the I-Kiribati tax authorities raised the issue of the payment of royalties on landings, additional to catching fees. This incorporated the concept that even after catch the tuna “belongs” to I-Kiribati. The consultant was unable to ascertain from the fishery staff their interest in such an approach.

## **B.16 FISHERIES MANAGEMENT CAPACITY**

### **B.16.1 Assets**

Due to its extent, much of the Kiribati EEZ, as with most Pacific EEZs, goes unpatrolled. To guard the enormous expanse of sea, Kiribati owns one Australian-built Forum Class small patrol boat called *Teanoai*. The *Teanoai* was commissioned in 1994 and displaces 162 tons. The vessel has a top speed of 20 knots and is berthed at Bairiki Island in the Tarawa Atoll, part of the Gilbert Islands.

Kiribati has no regular military force or navy. There are police posts on most of the inhabited atolls, and it is the police force that carries out not only law enforcement but also paramilitary responsibilities. The police manage the operations of the fisheries protection vessel.

### **B.16.2 Legal Basis**

There are several key aspects of monitoring, control and surveillance and enforcement authorities and actions that are addressed in the Fisheries Act. These include the authorities of Authorized (Fisheries) Officers to stop; board; inspect; or search the vessel; examine and take notes of all documents, gear and fish, processing or other activities; monitor fishing and processing operations; take samples; request licenses or other documents; direct the vessel to port or other area; arrest, detain, or seize articles as evidence (the vessel, gear, fish or other evidence such as poisons, explosives, etc.) with the provision of a receipt; or other lawful enforcement activities<sup>24</sup>.

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<sup>24</sup> It is noted that Authorized Officers must turn over the vessel or arrested individuals to the police on arrival in port – if this implies that Fisheries Officers do not have full enforcement powers of arrest and seizure as per the

The officer has authority to detain and arrest a vessel, master and crew *within fisheries limits, where he/she has reasonable and probable grounds that an offence has been committed*, but not outside those waters in a “hot pursuit” situation.

The Authorised Officer is protected from obstruction, and is non-liaible for actions done in the pursuit of their lawful duties.

The standard activities leading up to, during, and following proceedings are addressed in the Fisheries Act, e.g., jurisdiction of the courts, seizure of evidence and goods, detention, release on bond, disposal of seized goods such as forfeiture, release of goods on a finding of “not guilty”, etc..

### B.16.3 Assessment

The SPC undertook a study of the monitoring of the tuna fisheries by the Kiribati and other Pacific Islands countries (OFP 2003).

Activities in the Kiribati waters are summarized as:

- i. **Log sheets.** Foreign licensed vessels are required to provide daily catch and effort information on regional log sheets and communicate weekly catch reports. Log sheet coverage is approximately 100% for purse seine and pole-and-line vessels. Log sheet coverage of the longline fleet is unknown due to uncertainty regarding the level of logsheet coverage for the main Korean fleet.
- ii. **Landings.** There is a requirement to document catch trans-shipments, although the unloading documents are not provided to OFP and coverage is assumed to be low.
- iii. **Vessel activity log:** Not yet implemented.
- iv. **VMS:** All foreign vessels are required to carry Automatic Location Communicators (ALCs) and vessel locations are monitored by the Fishing License and Enforcement Unit.
- v. **Observers:** The Kiribati National Observer Program (KNOP) started in 2001 following the completion of 2 observer trainings jointly conducted by SPC and FFA. The Program main objectives are:
  - Fisheries and biological data collection
  - Monitoring and compliance purposes
  - Deter illegal fishing operations
  - Report and record of fishing vessels sighted, by the fishing vessel

In 2002, an observer coordinator position was established within the MFMRD and the observer programme has been strengthened with about 20 observers employed on a contractual basis. Observers are based in Tarawa and Kiritimati Island. The observer programme was developed in accordance with the regional protocols developed by OFP. Most vessel access agreements specify a level of observer coverage. However, the current level of observer coverage, particularly for the longline fishery, is very low (<1%).

There less than 50% observers are still with the Program. Despite the reduction in number of observers, there has been steady number of observer trips. At present observer coverage on purse seiners is low at less than 5%, while for long liners it is

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Police Act, and are so covered and protected by the law, then it would be recommended that this be changed accordingly as soon as possible to protect said officers in all cases of illegal activities at sea, e.g., customs, illegal drugs, immigration, etc..

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1 %. The aim is to have coverage of an initial 5% and then 20%. Quality of observer data is an issue and Kiribati is keen to improve its observer data quality to meet the expectations of the WCPFC. Initial funding for the Program was provided by SPC in collaboration with FFA. Funding for the Kiribati Observer Program will slowly be taken over by the Kiribati Fisheries core funding.

Spanish vessels fishing in the EPO have an on-board observer coverage of 100% in keeping with the Agreement on the International Dolphin Conservation Program (AIDCP), managed by the IATTC. The observers continue their activity when changing from the EPO to the WPO where 50% belong to the AIDCP-IATTC program and 50% to the EC-Spain (Programa Nacional de Observadores de Tunidos, PNOT) program. They record data according to the forms and methodology laid down by the IATTC.

- vi. **Port sampling:** Few port sampling data have been collected to date. Port sampling regained momentum in Kiribati during the early part of 2006. This follows a port sampling training carried out by SPC OFP staff that coincides with the increased transshipment activity in Betio Port. Port sampling by both observers and some fisheries staff has continued since then. Data is not available at this time, but will apparently be made available in the 2006 Annual Country Report to WCPFC.#
- vii. **Export documentation:** There is no export of tuna from Kiribati except by carrier vessels.
- viii. **Vessel characteristics:** FLEU operates a licensing database that contains information on vessel characteristics.
- ix. **In-port inspections:** Not undertaken.
- x. **Data management and reporting:** Weekly vessel catch reports are entered in a database administered by the FLEU. Logsheets and observer data are provided to OFP for data processing and incorporation into regional databases and the Kiribati national tuna database. FLEU are equipped with the CES software for generating reports of catch and effort data. Summary data are provided annually to SCTB.

OFP (2003) concluded that priority measures/recommendations to strengthen capacity included:

- i. To ascertain the level of logsheet coverage for the Korean longline fleet and improve coverage, if necessary.
- ii. Strengthen data management procedures, including the timely provision of data to OFP.
- iii. Increase the level of observer coverage, in particular for the foreign longline fishery.
- iv. Develop the capacity for staff to analyse catch and effort data to enable routine monitoring of the fishery.
- v. Introduce annual returns for vessel activity and vessel characteristics for all domestic vessels.
- vi. Systematically collect unloading data for all landings and transshipments in Kiribati.

The practical application of MCS in Kiribati is limited, due mainly to lack of resources associated with the vast area to be covered. While the EC may consider assistance, the reality is that it is more cost effective to continue efforts on the part of FFA which deals with training and advice.

## **B.17 INTERNATIONAL ASPECTS OF FISHERIES POLICY**

### **B.17.1 I-Kiribati Policy**

Kiribati has participated in regional fisheries management initiatives since the early 1980s as an active member of FFA and remains committed to these processes.

In 2002, Kiribati signed the United Nations Convention on the Law of the Sea of 10 December 1982 (UNCLOS 1982); and supports the:

- i. Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, known as the *UN Fish Stocks Agreement*, which came into force in October 2001;
- ii. Food and Agriculture Organization of the United Nations (FAO) Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, commonly called the *FAO Compliance Agreement*; and the
- iii. FAO Code of Conduct for Responsible Fisheries.

Kiribati continues its commitment to the FFA Harmonised Minimum Terms and Conditions For Foreign Fishing Vessel Access, including its reporting requirements, the need for foreign vessels to be in good standing on the FFA Regional Register and comply with the FFA VMS. Finally, after actively participating in the Multi-lateral High Level Commission (MHLC) preparatory meetings, it has signed the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean..

Kiribati has recognized the need for a general review and revamping of all its fisheries-related legislation, international and regional agreements to meet its international obligations, maximize the benefits of these arrangements for Kiribati, and keep the fisheries development priorities in the forefront of new legislation and flexible through the regulatory processes.

### **B.17.2 Principal Regional Organisations**

#### **B.17.2.1 Forum Fisheries Agency**

The Pacific Islands FFA was established in 1979 and now consists of seventeen participating states. The FFA consists of the *Forum Fisheries Committee* (FFC) as the governing body comprising a representative from each member Country and Territory; and the *FFA Secretariat* based in Honiara in the Solomon Islands. The reason behind the FFA's formation was the desire the signatories to pool their resources to promote intra-regional co-ordination and co-operation through harmonisation of fisheries management policies, and co-operation in the areas of fisheries development, access and enforcement.

The FFA has a substantial capacity for the joint management of the Western Pacific Ocean fisheries resources (focusing on four major tuna species; skipjack, big-eye, yellowfin and albacore), culminating in the establishment of the WCPFC. The FFA also collaborates with other fishery management, science and environmental organisations such as the Secretariat to the Pacific Community's Oceanic Fisheries Program (SPC-OFP), the Secretariat to the Pacific Regional Environment Program (SPREP), and the United Nations Food and Agriculture Organization (FAO). The FFA is also working with the European Commission through DEVFISH.

### **B.17.2.2 Secretariat of the Pacific Community**

Formerly the South Pacific Commission, SPC has recently received assistance from EDF via the PROCFish and COFish projects. SPC received also considerable funding from EDF with a (i) Regional Tagging Programme (RTTP) and a sampling / monitoring programme (Supertramp) and (ii) the *Pacific Regional Oceanic and Coastal Fisheries* (PROCFish) project was funded by EDF 8 and implemented by SPC.

### **B.17.2.3 Western and Central Pacific Fisheries Commission**

The *Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean* established the Western and Central Pacific Fisheries Commission (WCPFC) at the end of 2004 to conserve and manage migratory fishery resources in the western and central Pacific Ocean. WCPFC is based in Pohnpei, Federated States of Micronesia and includes a ‘Scientific Committee’ (SC) and a ‘Technical and Compliance Committee’ (TCC). WCPFC will employ a small scientific and technical staff. The *Secretariat of the Pacific Community* (SPC, see below) will be the interim provider of science to the SC. The SC is comprised of Contracting Party representatives, and is expected to establish several Specialist Working Groups, and will recommend research plans and reviews stock assessments (which may be produced by independent experts) to the WCPFC. The SC will also work with TCC on Observer Program procedures. Representatives of the SPC *Oceanic Fisheries Programme of the Pacific Community*, IATTC and other organisations can be invited to participate in the SC. Commission can engage other scientific experts to provide information and advice. The EU has been a Member of the WCPFC since January 2005 (Council Decision 2005/75/EC). Kiribati is also a Member of WCPFC.

It is expected that the WCPFC will, with the support of FFA and SPC, develop a regulatory and advisory management structure for fisheries within the Convention Area. This may include a vessel registry, and IUU list as well as a data collection programme focusing on the collection of landings and logbook data to assess catch and effort. It has already utilised links with SPC to produce estimates of sustainable catch and effort levels for target species and the impacts on stocks of potential management measures (Hampton *et al*, 2005).

## **B.18 STAKEHOLDERS**

### **B.18.1 National**

#### **B.18.1.1 National Government**

The I-Kiribati government recognises fully the need to maintain income from the tuna fishery. By preference, income would be generated through the activities of national vessels landing to a domestic processing industry generating income, employment and foreign exchange. However, the reality of Kiribati signifies that in the medium term at least there is unlikely to be meaningful investment, either by I-Kiribati or foreign investors. Accordingly, as indicated in the Annual Plan, one objective is to negotiate an increase in the value of the licenses between one period and another. This value is not just measured in the license fee, rather on the assistance a country or company can provide in development assistance, whether this be fisheries related or otherwise.

### **B.18.1.2 I-Kiribati**

One of the main national stakeholders is the population of Kiribati. The I-Kiribati interest in the gravest of fishery resources within the I-Kiribati EEZ is due to three reasons.

- i. The dependence of the national economy on income from the sale of fishing licenses.
- ii. The need to ensure the sustainability of fish resources in order to maintain food security.
- iii. A large number of I-Kiribati work on foreign fishing vessels, and that along with work in merchant shipping, is an important source of income. In turn, there is a high degree of dependence by families on the income generated by seamen.

The efforts to tie in donor aid with the issue of licenses is also an important element in determining the prospects of the country, which in turn affects the quality of life of the inhabitants.

### **B.18.1.3 CPPL**

CPPL is interested in the potential to develop its activities, either through donor support or joint ventures.

## **B.18.2 European Stakeholders**

The Spanish purse seiners licensed to operate in I-Kiribati waters belong to OPAGAC, which represents 8 companies with a total of 16 vessels. According to the OPAGAC web site, 6 of these vessels operate in the Atlantic, with the remainder equally divided between the Pacific and the Indian Oceans

The main current interest of OPAGAC is in providing the opportunity for individual vessels fishing in the EPO to follow the migrating tuna into the WCPO and the waters of Kiribati. Given that the base of operations is Ecuador, this situation is unlikely to change until the real value of tuna increases and vessels can maintain profitability while operating more widely in the WCPO. Establishing a second base or working through trans-shipments and supply vessels would prove to be more expensive and require new investment.

To date European long liners have not made use of licenses to fish I-Kiribati waters. This is because their main target species, swordfish, is found further south. However, in the future it may prove to be the case that Spanish long liners, amongst others, show a greater interest in fishing I-Kiribati waters especially if there are restrictions in their current effort or there is a change in the relative price of swordfish and yellowfin.

## **SECTION C: EVALUATION**

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### **C.1 THE PROTOCOL**

Kiribati first discussed the potential for the licensing of Spanish purse seiners in 1999. In July 2002, the EU and the Republic of Kiribati signed a bilateral Fisheries Agreement. This Agreement provides fishing possibilities, exclusively for tuna, for EU vessels fishing in the waters of Kiribati. The agreement was ratified in 2003. The first protocol under this new agreement entered into force on 16 September 2003 and provides fishing opportunities for tuna.

### **C.2 PRINCIPAL FEATURES OF THE PROTOCOL**

#### **C.2.1 Summary of the current Protocol**

The main characteristics of the protocol are described in Table 39. The main points are:

- The duration of the protocol is for a period of 3 years, until 15 September 2006.
- The overall financial compensation has been fixed at € 546,000 for the first year and € 416,000 for the two subsequent years.
- Of this amount €100,000 is allocated for targeted actions.
- Licence fees are set at €21,000 and €4,200 as an advance payment for 600 t and 120 t. for purse seiners and long liners respectively. A further payment of € 35 per t. of tuna caught, is met by ship-owners for any additional catch above those quantities.
- The reference tonnage in Year 1 was 8,400 t., reducing to 6,400 t. in the subsequent two years with possibilities for increase according to the number of purse seiners licensed.
- The Protocol provides for fishing opportunities for 6 tuna seiners (allocated by the EC to France and Spain) and 12 surface long liners (allocated by the EC to Spain and Portugal). As from the second year, fishing possibilities were levelled at a minimum of 4 purse-seine vessels and 12 long-liners. However, the number of purse-seine vessels could be increased up to 11 vessels.

**Table 39: Main Characteristics of the First Protocol**

<b>Length of Protocol</b>	
Date of Entry into Force of Protocol	16 September 2003
Length of protocol	3 years
<b>Annual Financial Compensation</b>	
Total Compensation	Year 1 €546,000 Years 2+ €416,000 From year 2 of the agreement, for each additional purse seiner license granted a payment of €65,000 will be made.
Paid to Treasury	Year 1 €446,000. Yearly in advance on anniversary of protocol signature Years 2+ €316,000 From year 2 of the agreement, for each additional purse seiner license granted a payment of €65,000 will be made directly to the treasury.
Targeted Measures	Year 1 €100,000. Years 2+ €100,000 The programming of these measures shall be decided on by the Kiribati authorities and shall be sent to the EC for information before the first payment.
Extra catches	From the second year of the agreement, payment will be increased by €65 per t. for any catches in excess of the reference tonnage, to a limit where the total amount paid by EC is not more than double the annual financial compensation based on the reference tonnage. The amounts for additional catches, as with the allocation of additional purse seiner licenses, will be paid directly to the treasury.
<b>Targeted Measures</b>	
	€50,000: Participation of Kiribati officials to regional and international fishery related meetings.
	€35,000: Institutional Support to the Administrative Department responsible for fisheries.
	€15,000: Kiribati contributions to regional and international fisheries organisations.
<b>Fishing Opportunities</b>	
Reference Tonnage	Year 1: 8,400 t. Years 2+: 6,400 t.
Maximum Number of Purse Seiners	Year 1: 6 Year 2: 4 From the second year of the agreement, at the request of the community and if resources permit, additional purse seiner licenses may be granted, up to a maximum of 7 additional licenses.
Maximum Number of Long Liners	Year 1: 12 Year 2: 12
<b>License Fees</b>	
Duration of license	1 year
License Fee	
Purse Seiners / Long Liners	€35 per tonne of fish caught
Advance payment:	
Seiners	€21,000 (equivalent to 600 t.)
Long liners >150 GRT	€4,200 (equivalent to 120 t.)

Additional Fees	License Registration Fee €600 / vessel Fisheries Observers Project Fund €400 / vessel In the case that two Kiribati nationals are not employed as crew members: Central Pacific Producer Fund should be paid the equivalent of wages for two crew members.
<b>Other Elements</b>	
Joint Committee	A joint committee will be established to ensure that the agreement is properly implemented.
Final Statement	At the end of each fishing year, a final vessel statement, verified by a competent scientific institution, has to be notified to the EC by vessel owners before June 30 of the subsequent year. A statement of account will be sent to the Kiribati authorities and to the vessel owners, which have to make whatever extra payment due within 45 days.
Agents	The ship owner will appoint an agent who is resident in Tarawa.
Exclusivity	There is NO exclusive clause prohibiting any private license or other arrangement between Kiribati and EC flagged vessels.
Control of Activities	Licensed vessels will be subject to VMS whose specific conditions will be agreed separately by the parties. Before such specific conditions are applicable, and as a transitional arrangement, EC vessels must comply with regional VMS requirements applicable within the Kiribati fishing zone. Vessels will communicate to the Kiribati CFO by fax or by e-mail (a) at least 24 hours prior to entering the Kiribati fishing zone and immediately prior to leaving (b) every Tuesday while within the Kiribati fishing zone (c) at least 48 hours prior to entering a Kiribati port and immediately prior to leaving (d) immediately after trans shipping the catch to a licensed reefer (e) at least 24 hours prior to refuelling from a licensed refuelling ship. Owners of purse seine vessels will provide a copy of the landing receipt after completion of every fishing trip that took place totally or in part within the Kiribati fishing zone.
Observers	At the request of the Kiribati authorities, EC vessels will take one observer on board at least 20 % of their fishing trips.
Kiribati Seamen	Each EC vessel fishing under the agreement will employ two Kiribati nationals as crew members; if it does not then an <i>in lieu</i> payment should be made (see above)
Fishing Zone	Fishing must be outside 12 miles. Purse seiners cannot fish with 60 miles of the Islands of Tarawa, Kanton and Kirimati, or within 3 miles of any anchored FAD.
Trans-shipments / Landings	No trans-shipping in the high seas is allowed. Vessel shall trans-ship at least three times a year in any port of call in Kiribati. The carrier vessel has to be registered and fulfil observer conditions.

### C.3 FISHING ACTIVITIES UNDER THE PROTOCOL

#### C.3.1 Utilisation of fishing opportunities

##### Licenses

In the first year of the protocol, 6 licenses were available for purse seiners with 4 in each of the two following years (table 40). Over the three years of the agreement, 8 of the 14 vessel licenses (57%) available for purse seiners were issued. For the current year, one of the purse seiners did not renew its license. The figure for long liners, for which 12 licenses are available on an annual basis, is 10 out of the 36 available (28%). A peak of 5 licenses was issued in 2004/05.

**Table 40: Utilisation of Fishing Opportunities**

	Purse Seine		Long Line	
	Available	Issued	Available	Issued
2003 – 2004	6	3 (50%)	12	2 (17%)
2004 – 2005	4	3 (75%)	12	5 <sup>25</sup> (42%)
2005 – 2006	4	2 (50%)	12	3 (25%)

<sup>25</sup> This number is provided by the EC; I-Kiribati reported 8 to the consultant.

### **C.3.1.1 Catch**

The reference tonnage in 2003/04 was 8,400 tons, with 6,400 tons in the following two years. Taking calendar year reporting to be the same as agreement years (October to September), the total catch in the first year was 624 tons or 7.4% of the reference tonnage, with respective figures for 2004/05 being 607 tons and 9.5%. The main species caught is skipjack (83.5%) (table 41).

**Table 41: Catches declared by EU vessels: EU- Kiribati fisheries protocol 2003 - 2005**

Vessel Species	2003/04	2004/05
Vessel 1	389	0
Vessel 2	135	495
Vessel 3	100	112
Total	624	607
Skipjack	518	507
Big Eye	18	17
Albacore	88	83

Note: 2005 catch by species: consultants estimate

## **C.4 COMMUNITY VESSELS COMPLIANCE WITH AGREEMENT PROVISIONS**

### **C.4.1 Entry and Exit Notices**

I-Kiribati authorities report that no entry and exit notices were received from EC vessels in 2005 and 2006.

### **C.4.2 Catch Declarations**

The Commission sent 2005 catches declarations in June and July to the Kiribati authorities via the Delegation. Declarations were made in 2004. In 2003 there were no catches under the FA.

### **C.4.3 Additional licence payments**

Catches by individual vessels have not been above the quantities covered by advanced payments.

### **C.4.4 By-catch**

No by-catch has been reported by purse seiners. Licensed long liners have not reported any catches in Kiribati waters.

### **C.4.5 Infractions of fisheries regulations**

No infractions of fisheries regulations have been reported.

### **C.4.6 Fish landings**

No landings or trans-shipments have been made into I-Kiribati ports, contravening the fisheries agreement. It is understood that landings are made into Ecuador (Manta or Posorja).

The I-Kiribati authorities have received no copies of the landing receipts, again in contravention of the agreement.

In theory, infringements of the license stipulations lead to a penalty of A\$50,000 (see table 29). However, I-Kiribati authorities have not taken any actions.

## **C.5 KIRIBATI COMPLIANCE WITH PROVISIONS OF THE PROTOCOL**

### **C.5.1 Licensing procedures**

No comments were received from the European vessel owners.

### **C.5.2 Planning and reporting of measures financed by the Agreement compensation**

One of the main problems with FA has been the I-Kiribati compliance with the agreed procedures for notifying proposed plans for financing under targeted measures and reporting actual expenditure. Discussion with the fisheries department indicated a certain level of uncertainty about the correct procedures which are not consistent with other procedures in the department..

### **C.5.3 Procedures for transfer and use of FPA Funds**

A further reason for delay was the need to change from the FA and transfer targeted action funds to the Number 4 Account (Development Funds) rather than the Number 1 Account (Appropriated Funds). This requirement was clarified in the letter of June 15, 2005 to the EC Delegation in Suva, at the same time as a claim was made for reimbursement of the first €100,000.

As shown in table 42, reclaims have now been made for financial years 2003/04 and 2004/05 with proposals for spend in 2005/06.

- i. 2003/04: The letter was sent on June 15, 2005, claiming €100,000.
- ii. 2004/05: The consultant was informed that a letter had been sent to the European delegation in June, 2006. However, as of the end of June, no letter had been received by the European delegation. The claim totalled €115,066.
- iii. 2005/06: Similarly, the consultant was informed that a letter had been sent to the European delegation in June, 2006. However, as of the end of June, no letter had been received by the European delegation. Planned spending was €114,581

There is some inconsistency between the amounts reclaimed by account heading and that defined in the protocol. This is particularly the case with the proposed use of funds for 2005/06, with no allocation for payment of dues to international organisations. For the three proposals, there appears to be no consistency between the costs of trips.

On the basis of the foregoing, it is concluded that I-Kiribati authorities are not in compliance with this section of the FA.

### **C.5.4 Licence Income**

As described in the economic evaluation of the agreement below, in the first two years of the protocol the I-Kiribati government received an average of €481,000 in financial contribution, €83,500 in license fees and €8,500 for registration fees and contributions to the Observer Fund.

### **C.5.5 Revenues from the EU-Kiribati Fisheries Agreement Compared to Other Sources**

The budgeted income from the sale of fishing licenses in 2006 is €19 million, implying that the total income from the EC/Kiribati agreement is about 3 %.

**Table 42: Targeted Actions (2003/04 – 2005/06)**

	<b>Outcome 2003/2004</b>	<b>Outcome 2004/05</b>	<b>Project Proposal 2005/2006</b>
€50,000: Participation of Kiribati officials to regional and international fishery related meetings.	FAO Meetings (4 persons) A\$55,697 WCTC (4 persons) A\$58,907 TOTAL A\$ 114,604 (€63,616)	PNA Meetings (2 persons) A\$6,600 Fisheries Negotiations (16 persons) A\$52,800 FFC Meeting (2 persons) A\$6,600 Tuna Commission (2 persons) A\$6,600 IWC (1 person) A\$15,000 TOTAL A\$87,600 (€53,023)	Fisheries Negotiations (16 trips) A\$52,000 TOTAL A\$52,000 (€31,475)
€35,000: Institutional Support to the Administrative Department responsible for fisheries.	Training of 11 new entrants into fisheries division A\$36,286 TOTAL A\$36,286 (€20,142)	Kiritimati Fisheries Development Support A\$10,000 MCS €35,000 Communications (fax, tel) A\$10,000 Computer & Printer Accessories A\$5,000 TOTAL A\$60,000 (€36,317)	Kiritimati Fisheries Development Support A\$10,000 MCS €35,000 Communications (fax, tel) A\$10,000 Computer & Printer Accessories A\$5,000 Fisheries Development Activities & on-going research works A\$34,800 Support to the running of Te Tia Akawa and Te Benebene A\$20,500 Support to fisheries development related activities of the Ministry's Public Enterprises A\$22,000 TOTAL A\$137,300 (€83,106)
€15,000: Kiribati contributions to regional and international fisheries organisations.	FFA A\$20,046 IWC A\$12,142 TOTAL A\$32,188 (€17,868)	FFA A\$19,000 PNA Coordinators Post A\$3,500 IWC Contribution A\$20,000 TOTAL 42,500 (€25,725)	
<b>Total</b>	<b>TOTAL A\$183,088 (€101,627)</b>	<b>A\$190,100 (€115,065)</b>	<b>A\$289,300 (€114,581)</b>

## **C.6 OTHER AREAS OF COMPLIANCE WITH THE PROTOCOL**

### **C.6.1 Joint Committee**

No joint committee has been established.

### **C.6.2 Licensing procedures**

No observers have been placed on board EU vessels nor requests received.

### **C.6.3 Kiribati Seamen**

No I-Kiribati seamen were contracted by EU vessels, nor is there evidence of *in lieu* payments.

## **C.7 STAKEHOLDER ASPIRATIONS**

A summary of stakeholder aspirations in relation to the EU Fisheries Agreement is shown in Table 43.

## **C.8 CONTEXT AND INTEREST IN THE FPA**

### **C.8.1 Interest in an FPA**

Through participation in the Palau Arrangement and membership of the Nauru Agreement, the Government of Kiribati is about to enter a new stage in the management of purse seiner effort on stocks of tuna in the WCPO. This amendment of the Palau Arrangement, signalling a move from restrictive vessel licensing to effort limitation based on vessel days is expected to bring a number of benefits to the parties. Chief amongst those benefits is the potential to move away dependence on traditional licensing partners to others which offer the potential for higher returns. Whether in political terms this is realistic or not remains to be seen. However, while the level of aid to Kiribati from Taiwan and Japan together with the historic presence of tuna fleets from these countries in I-Kiribati waters makes it likely that these countries will continue to receive preferential treatment, there were some comments within the FFA that the Koreans feel threatened due to their low level of assistance to Pacific countries over the years. Two other points need to be taken into consideration when considering the future allocation of licenses in I-Kiribati waters. Firstly, it appears that the level of long line effort is diminishing and this is reducing the overall income received from the licensing of foreign fishing vessels by I-Kiribati authorities. Secondly, and although their specific needs are covered by a specific treaty, the level of U.S effort throughout the WCPO continues to decline. On that basis, the Government of Kiribati will be interested in identifying alternative sources of income.

**Table 43: Stakeholder Aspirations and Issues**

Aspirations	Concerns
<b>Government of Kiribati</b>	
Increase the value of the fishery license. Gain support for development of on-shore tuna related infrastructure. Increase in national benefits derived from the Agreement including development of joint-enterprises to develop fishing activity and fishery sector in Kiribati. To strengthen the market for fishing licenses in Kiribati waters. To increase finance available for direct fisheries expenditure.	Potential loss of revenue from non renewal. Lack of interest in joint venture possibilities.
<b>Kiribati - Other</b>	
Potential for joint ventures. Employment on EU vessels.	Impact of foreign fishing on natural resources.
<b>EU long line fleet</b>	
Provide the option for fishing in I-Kiribati waters. Establishing a presence in the WCPO.	Loss of agreement could affect future prospects.
<b>Spanish Purse seine fleet</b>	
Provide the option for fishing in I-Kiribati waters. Establishing a presence in the WCPO.	Loss of agreement could affect future prospects.
<b>European Commission</b>	
Establishing a presence in the WCPO. Continued access for EU vessels Maintaining fishing in a responsible and sustainable manner Supporting sustainable development benefits to Kiribati.	Limited take up of fishing possibilities
<b>EU processors and marketers</b>	
Maintaining the supply potential.	
<b>EU consumers</b>	
Continued and reliable supply of product of good quality at competitive prices	Concern over sustainability of resource and environmental impacts

The initial premise behind the I-Kiribati approach to Spanish tuna fishing interests, was firstly to generate competition for fishing opportunities to strengthen their bargaining position with Taiwan, Korea and Japan, and secondly, to encounter partners which would have an interest in investing in on-shore facilities. The I-Kiribati perception of the development issue in the late nineteen – nineties was that, if they were going to do so, Taiwan, Korea and Japan were more likely to invest in countries further to the west and closer to their home ports rather than in Kiribati located on the fringe of the WCPO region. A further point in opening up discussions with Spain was to provide an entry for wider negotiations with the EC.

Given that there are no data available, it is not possible to conclude whether the initial agreement with OPAGAC and the subsequent FA with the EC has strengthened I-Kiribati negotiating power with Asian countries. It is certain that the I-Kiribati authorities are disappointed at the low level of take up of license opportunities and the lack of interest by the EC and EU vessel owners in making on-shore investment in the country. However, the initial strategy did work in providing the basis for development of European interests through conclusion of an FA.

The principal interests of the I-Kiribati authorities is to maximise revenue from licenses and to promote on-shore development that would allow I-Kiribati to benefit from value added to the tuna catch. The potential for the latter is limited given the paucity of port infrastructure facilities in the country, with wharves which at the moment are unable to cater for vessels with a deep draught. Japan gained favour by developing CCP facilities in Kirimati, with the provision of on shore infrastructure and 5 fishing vessels. However, capacity in South Tarawa for example still constrains the potential to develop on-shore tuna related activities – vessels would have to lie in the lagoon and be unloaded by raft, and cold store capacity is just 200 tonnes. A large project could be designed – with development of the port and on-shore facilities – and this would be greatly beneficial to the overall economy; however the cost is likely to be extremely high.

The Government of Kiribati, along with other countries in the region, receives considerable well directed aid from the FFA and SPA in the monitoring and management of the tuna resources. Additionally, the Government of Australia inputs into MCS activities, with assets, training and co-ordination of patrol activities. Unless it was a large scale infrastructure project, or assistance in developing the domestic long line fleet, there is unlikely to be a role for the EC in tuna MCS and management beyond what it is currently doing on a regional basis.

Over recent years, various governments have inputted into aquaculture development projects. However, there are opportunities to develop reef and lagoon fisheries, specifically with on-going resource assessment, the development of management plans and assistance in determining the potential for export markets e.g. lobster and high value reef fish. A specific sector strategy for non-tuna resources would prove valuable to the I-Kiribati authorities.

To date the take up of licenses by EU vessels has been low, with only two purse seiners currently licensed. However, this position could change with the newly signed agreements with the Solomon Islands and FSM, making it more worthwhile for Spanish purse seiners based in Manta, Ecuador to fish further inside the WCPO area. The potential of the VDS scheme to allow access to the waters of other countries could also be important.

### **C.8.2 SWOT Analysis of the Fishery Sector**

Table 44 presents a SWOT analysis of the I-Kiribati fishing sector. While the country is rich in tuna resources, its role as one of the main sources of revenue tends to influence the way the fishery is managed. Due to the need to respond to short term necessity there is a lack of medium to long term planning.

**Table 44: SWOT Analysis of the Kiribati Fishing Sector**

<b>Resources</b>			
<b>Strengths</b>	<b>Weaknesses</b>	<b>Opportunities</b>	<b>Threats</b>
Strong availability of tuna resources.	Limited “in house” knowledge of resource evaluation but this is countered by strong regional support from SPC. Some regional stocks e.g. yellowfin, bigeye already heavily exploited.	Higher revenues from regional action to change conditions of access for foreign fishing vessels.	Danger of unreported and unregulated fishing
Reef and lagoon fisheries.	Lack of knowledge of resource abundance and possibilities. No fishery management plans for local fisheries. No biological expertise to conduct on-going resource evaluations	Increase number of FADs	Increased commercial interest in such fisheries leads to their rapid over exploitation..
<b>Institutional Framework</b>			
<b>Strengths</b>	<b>Weaknesses</b>	<b>Opportunities</b>	<b>Threats</b>
Institutional basis exists for planning and management of fisheries sector.	Limited budget availability.	Institutional restructuring and strengthening programme	Lack of finance to implement required changes.
Fisheries is the main driver of national development using own resources.	Lack of a specific detailed development plan for fisheries. No formal fisheries management plans. Lack of funding to the fishery sector. Ad hoc management that is focussed on raising revenue.	Preparation and implementation of prioritised development plan Preparation and implementation of fisheries management plans.	
Given the lack of a developed private sector the Fisheries Administration attracts high calibre individuals.	Insufficient numbers of trained individuals. Over dependence on a limited number of capable staff. Large area to be covered by staff with poor transport links and poor communications.	Identification of specific training needs and a medium term programme to establish the required cadre of personnel.	The most talented individuals seek to emigrate.
	Government is involved in the private sector through State owned Enterprises. State owned enterprises are not profitable.	Privatisation of state owned enterprises.	Political wish to retain control over SCE.
Good training facilities available for fishermen.			Reduced demand for Kiribati crew.
MCS supported by FFA and the Government of Australia.	Limited capacity to make effective use of information generated by VMS. A dormant observer programme. There is very little cooperation between the fisheries administration and the NCG to improve fisheries law enforcement at sea.	More rigid application of vessel licensing requirements re. reporting, observers and VMS. FPS and the National Coastguard Increased regional coordination and participation in MCS	Difficulty in policing vast EEZ. Lack of collaboration by licensed foreign vessels.

Aquaculture			
Strengths	Weaknesses	Opportunities	Threats
A large number of species suitable for aquaculture.	Lack of commercial success Limited domestic market. High cost of inputs. Reliance on donor aid.	Maintain policy of using aquaculture to restock native populations.	
International Organisations			
Strengths	Weaknesses	Opportunities	Threats
Strong regional organisations supporting development in Kiribati and other Pacific Island nations.	In ability to implement all recommendations.		
Legal Framework			
Strengths	Weaknesses	Opportunities	Threats
A developed legal system.	Lack of formal management plan and supporting legislation.	Review of legislation is in process.	
Research Capacity			
Strengths	Weaknesses	Opportunities	Threats
Good staff	Limited research facilities No designed research programme Lack of on going training. Lack of finance.	Develop research programme for non-tuna resources.	Competing demands from fisheries administration for use of finance available.
Strong regional support			
Environment			
Strengths	Weaknesses	Opportunities	Threats
Large areas of ocean and many islands with inhabitants.	Difficulty of policing distant Marine Park Areas. Lack of consideration of the environment in Fisheries Law Indications of trophic impacts from large pelagic fisheries Low bycatch of turtles and sea mammals need to be confirmed	Further development of MRAs Greater use of Kiribati observers to provide independent data on bycatch. Support from WCPFC on environmental issues.	Global warming. Pollution.
Private Sector			
Strengths	Weaknesses	Opportunities	Threats
	Limited private sector development. Lack of private finance. Limited opportunities for formal credit. Poor infrastructure. Expensive inputs. Remoteness. Limited local market.	Niche markets for high value products e.g. tuna loins, lobster, high valued fresh fish.	There are no improved air links.

There is lack of knowledge about resources other than tuna and lack of capacity to research and manage them. This is in spite of reef and lagoon fish being a mainstay of the national diet.

The main issues facing all of Kiribati is its location, its remoteness, the distances between islands and island groups, and the lack of an adequate infrastructure. In general the country is managed by the public sector and there is a lack of private enterprise.

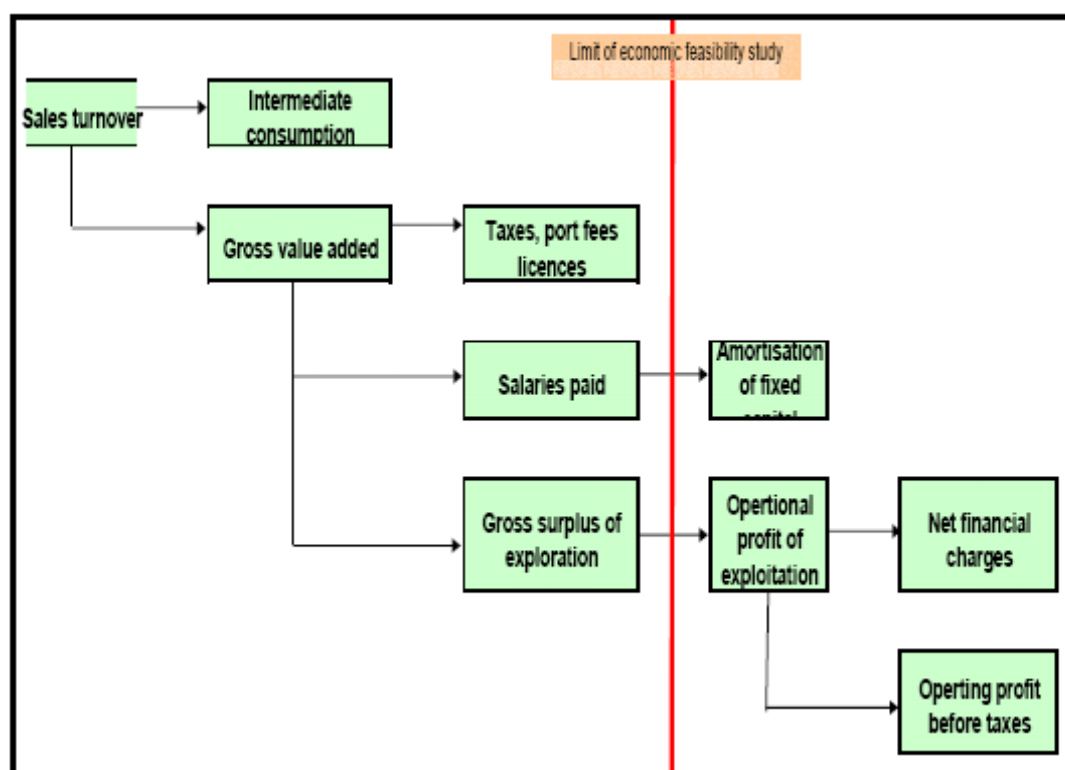
## C.9 ECONOMIC AND FINANCIAL IMPACTS

### C.9.1 Overview

#### C.9.1.1 Methodology

The methodology used for the calculation of the value added considers the intermediate consumption of the vessels through an investigation of their cost structure. The approach to the calculation is shown in Figure 26.

**Figure 26: Principal Costs and Intermediate balances in Consumption by EU Purse Seiners**



The first stage account of value added represents the gross value generated by the utilisation of labour and capital. The second stage account is the earnings before depreciation, interest and taxes (EBDIT). This amount is the difference between total sales realised and all the costs required to generate such sales.

Costs of sales include the labour costs, and taxes including access costs (the license) as well as the port charges. The EBDIT represents the amount destined to finance and remunerate investment capital (depreciation and loans). Depreciation and finance charges cannot be reasonably estimated owing to the heterogeneity/diversity of the fleet, taking into account the sizes of the vessels, age, different financing and depreciation methods used by each one. The study is therefore limited to the estimate of the gross value added and its constituent parts and does not account for the financial charges on each vessel.

There is no specific data available for the operation of the EC fleet fishing tuna and associated species in the West Central Pacific Ocean (WCPO) and the Eastern Pacific Ocean (EPO). Accordingly, data used for analysis of EC fleet activity in the Indian Ocean is used as a proxy.

The data regarding the operating accounts of the EU vessels has been obtained:

- From interviews with vessel operators in the sector undertaken through other studies;
- From scientific sources, regarding catch compositions, especially in relation to the Concerted Action Study “Economic Performance of Selected European Fishing Fleets” 2004; and
- From discussions with fleet stakeholders

The vessel accounts are expressed in terms of the principal costs elements expressed as percentage of sales. These accounts have been updated by applying a modest factor to account for price developments since 2005, principally in relation to fuel costs. The basic data and assumptions used as the basis for the estimates are available and will be included in the final report.

### C.9.2 Sales Value

The average prices for EU vessels used for financial analysis are shown in Table 45.

**Table 45: Tuna: Average Landed Values (€)**

Gear / Species	2004	2005
<b>Purse seine</b>		
Albacore	860	989
Skipjack	540	621
Bigeye	680	782
<b>Longline</b>		
Swordfish	5,430	5,430
Sharks	890	890
Yellowfin tuna	4,750	4,750
Albacore tuna	4,750	4,750
Bigeye	4,750	4,750
Others	4,750	4,750

During the period the main feature is a slight increase in the prices of the purse seine catches, with a 15% increase between 2004 and 2005.

On the basis of this data and reported catches, the total catch and value is given in Table 46. The total value of the catch taken by EC vessels operating under the FA in 2003/04 was €0.37 million, increasing to €0.41 million in the following year.

**Table 46: EC Catch & Value in Kiribati Waters**

	Purse Seine Catch		Species Value		Purse Seine Value	
	2003/04	2004/05	2003/04	2004/05	2003/04	2004/05
<b>Total</b>	<b>624</b>	<b>607</b>	<b>€ 589</b>	<b>€ 676</b>	<b>€ 367,640</b>	<b>€ 410,228</b>
Skipjack	518	507	€ 540	€ 621	€ 279,720	€ 314,847
Bigeye	18	17	€ 680	€ 782	€ 12,240	€ 13,294
Albacore	88	83	€ 860	€ 989	€ 75,680	€ 82,087

### C.9.3 Added value

The value added contributed by the Agreement is the difference between the sales value and the intermediate consumption. The direct value added is estimated to be €176,835 in 2004 and €188,705,000 in 2005, with an annual average of €182,770 (table 47).

The value added generated under the agreement should be supplemented by the up stream and down stream multipliers in vessel inputs and processing. These benefits mainly accrue to the country where the vessels are based and the processing is undertaken (in this case, Ecuador), and in addition countries that supply services such as insurance.

**Table 47: Estimated Direct Value Added 2003/04 & 2004/05 from the EC/Kiribati FA**

	<u>Gross Value Added</u>		
	<u>2003/2004</u>	<u>2004/2005</u>	<u>Average</u>
Purse Seiners	€ 176,835	€ 188,705	€ 182,770
Long Liners	€ 0	€ 0	€ 0
Total	€ 176,835	€ 188,705	€ 182,770

The Value Added was almost equally divided between the Community and the partner state. Value added attributable to Kiribati is limited to the licence fees paid by vessels plus the registration fee and contribution to the Observer Fund. There are no other direct revenues for Kiribati (for example crew wages) and also no indirect revenues (processing industry, vessel repairs and servicing, etc)

### C.9.4 Costs and benefits

The direct benefits to Kiribati amount to licence revenues of €70,400 in 2003/04 and €84,000 in 2004/05. In addition it benefited from a total payment of €1,000 per licensed vessel to cover registration fees and observer costs plus financial compensation (€546,000 in 2003/04 and €416,000 in 2004/05). Overall the benefits to Kiribati were €622,400 in 2003/04 and 508,000 in 2004/05, averaging €565,200, as shown in Table 48.

**Table 48: Breakdown of Costs and Benefits to Kiribati from the Agreement**

	<b>2003/04</b>	<b>2004/05</b>	<b>Average</b>
Financial Contribution	€ 546,000	€ 416,000	€ 481,000
Licenses	€ 70,400	€ 84,000	€ 77,200
Crew Wages	€ 0	€ 0	€ 0
Others	€ 6,000	€ 8,000	€ 7,000
Total	€ 622,400	€ 508,000	€ 565,200

### C.9.5 Employment

The average crew on a purse seiner is 32, of whom 12 will be EU nationals. Accordingly, with three purse seiners active the agreement has contributed directly to the employment of 96 EU fishers, including 36 EC nationals. Given the low level of dependency on the fisheries in Kiribati waters, the real contribution to EU employment has been limited.

No Kiribati crew has been employed on EU vessels fishing under the FA.

### **C.9.6 Supplies to market**

Given the low level of catch associated with landing and processing into Ecuador, the impact on supply to the EU market was minimal or non-existent.

No landings of tuna or by catch were made into Kiribati.

## C.10 EX POST EVALUATION

### C.10.1 Effectiveness

#### **What has been the contribution from the Agreement to the activities of Community fishery sector?**

The FA has allowed a small number of vessels to fish Kiribati waters adjacent to the EPO, which is where those vessels are based. Limited effort has taken place when tuna has migrated into Kiribati waters, so the FA has allowed the vessels to follow these migrations and to operate efficiently. To date, EU vessels have not targeted tuna fisheries in Kiribati waters, which for purse seiners are predominantly located 1,500 km to 1,800 km to the East around the Gilberts Group.

#### **What has been the contribution from the Agreement to employment of Community fishers?**

To date the ability to fish in Kiribati waters has contributed to the catch of three vessels, which in total employ an estimated 96 people of whom 36 may be EFC nationals. Given the low level of overall dependency of these vessels, with the 600 t. catch comparing to 5,200 t. overall in the WCPO in addition to catches in the EPO, it is hazarded that as matters now stand, the contribution of the agreement to the employment of community fishers is marginal.

#### **What effect has the Agreement with Kiribati had on the stabilisation of the Community market?**

Given the low level of catch, representing less than 1 % of EU consumption of tuna, contribution to the stabilisation of the Community market has been, at most, minimal. However, the FA has provided the basis for potential future development of activity in the WCPO and this may prove valuable in the future in stabilising the market.

#### **What impact has the Agreement had on development of the Kiribati fishery sector?**

The FA has contributed to the development of the Kiribati fishery sector through allowing participation in international meetings, funded training membership of international organisations and allowed some specific activities. While these activities would most probably have taken place in the absence of the FA, their financing would have reduced funding available for development projects. The €100,000 made available under targeted actions represents just under 2 % of the total spend of MFMRD.

#### **How does an Agreement with Kiribati contribute to the development of responsible fisheries?**

The Agreement provides for a modification of the fishing opportunities should conservation and protection measures so require. Catches of fish by EU vessels have been within sustainable limits and no such modification has been required.

Targeted actions funded under Agreement include support for activities related to fisheries management that contribute significantly to the maintenance of responsible fisheries by Kiribati..

After the first year, there has been a failure on the part of the EU purse seine vessels to

properly communicate catch declarations directly to the Kiribati authorities. The Kiribati authorities have failed to act against vessels that have not complied requirements in relation to catch and EEZ entry/exit declarations.

The Agreement has provided a means by which EU vessels fishing in the Kiribati EEZ can be clearly subjected to the management measures recommended by the WCOMC and FFA.

**Do the conditions of utilisation as outlined for the financial arrangements favour the development of the Kiribati sector?**

The targeted actions have the potential to benefit the development of the Kiribati sector, especially when a large number of individual projects on the Outer islands are of limited capital cost. There is concern, however, at the level of reporting of the plans for, and use of, targeted action funds and the long delay in requesting payment from the EC.

**C.10.2 Relevance and Strategic issues**

**Does the Agreement with Kiribati satisfy the various needs of the different interest groups in the Community?**

The security of access provided by the Agreement has created a basis for the continued viability of the Spanish tuna purse seine sector based in the EPO. Although neither this fleet nor EU long liners has exhibited high levels of interest in terms of actual fishing patterns, the access provided is commensurate with the regional fishing strategies pursued by these segments. The licence utilisation pattern suggests that the Agreement has met the requirements of the EU fishery sector in terms of a limited number of tuna purse seiners and surface long-liners.

The main species caught by the purse seiners, skipjack, is a healthy resource and effort by these vessels does not threaten its status. Fishing outside 60 miles of the main population centres in Kiribati limits the potential for adverse effects on the artisanal fishing fleet.

The EU processing sector has not been affected by the FA, although it remains possible that directed fishing effort in the WCPO will in the future form the potential for a significant source of supply. This initial protocol was a needed first step in establishing EU presence in the area.

**Does the Agreement with Kiribati satisfy the various needs of the different interest groups in the partner country?**

While the income generated by the FA is an important contribution to the I-Kiribati objective of maximising tuna fishing license revenues, there is a disappointment that there have been no ancillary benefits in terms of on-shore investment and activities. At the same time, it is understood that the basic condition of facilities in Kiribati, allied with the high costs of doing business, mitigate against investment.

### C.10.3 Sustainability

#### Does the Agreement with Kiribati assure the viability of Community fleet?

No the agreement does not assure the viability of community vessels. However, as part of a framework of FAs and FPAs, the agreement does contribute to the strategy designed to assure that viability. As the FA was the first of its kind for the EC in the WCPO, it has made a major contribution to potential fishing opportunities in the region.

#### Does the Agreement with Kiribati ensure the viability of the fishery sector in Kiribati?

The fishery sector in Kiribati is poorly developed. The FA does nothing to *threaten* its viability.

#### What risks are there to environmental sustainability as a result of the Agreement?

At current levels of catch up to the amounts allowed by the reference tonnage, the FA will present little risk to environmental sustainability. The catch of purse seiners is mainly skipjack and licenses issued to these vessels under the FA are part of an overall regional management policy. Additional effort by EU purse seiners will not increase overall purse seiner effort, rather it will substitute for effort currently undertaken by the vessels of other flags. Given the long line fishery in WCPO is not managed in the same way, there is some concern that effort by EU long liners would be additional to existing effort and this would not be consistent with the status of the yellow fin and big eye stocks

### C.10.4 Policy Coherence

#### C.10.4.1 With respect to EU and Partner Country Development Policy

The Country Strategy paper for 2002-2007 identified outer island social development as the strategic sector for European Union cooperation. The total financial allocation for 9 EDF is € 11 million; € 8.8 million is allocated to envelope A and € 2.2 million to envelope B.

The entire A envelope has been programmed for the 'Improvement of Health Services for the Outer Islands' project. The B-envelope (€ 2.2 million) has been programmed to assist Kiribati adapt to the effects of climate variability in accordance with the findings of the mid term review.

There are four on-going programmes under the 8 th EDF, including support to the Seaweed industry, scheduled for completion in November 2006.

Under consideration for the 10 th. EDF are three programmes; extension of rural electrification and improvement of water resources on the outer islands, Development of growth centres and Continuation of the health programme.

The FA is coherent with this policy as fisheries could benefit from the first and input into the second programme.

#### C.10.4.2 Regional Development Policy

The regional allocation amounts to € 29m and includes three focal sectors: “Economic Integration and Trade” (€ 9m); “Human Resources Development” (€8m); and “Fisheries” (€ 5m). In addition, there is a non-focal sector, for extension of the 8th EDF programmes to the 6 new ACP countries (€ 7m). The three specific fisheries projects are coherent with the objectives of the FA.

The Pacific Regional Oceanic and Coastal Fisheries Programme aims to address the information gaps for tuna stocks and reef fisheries, with the aim of strengthening the long-term sustainable management of the fisheries resources of the Western and Central Pacific Ocean (WCPO). The oceanic component, builds upon the work undertaken in the main tuna species of the 7th EDF assisted South Pacific Regional Tuna Research and Monitoring Programme (SPR TRAMP) programme, extending this to include the need for detailed analysis and monitoring of ‘bigeye’ tuna and by-catch species. The coastal component will involve a comprehensive comparative assessment of reef fisheries in the Pacific Islands region. This is groundbreaking research as no comparable activity of this kind has ever been undertaken in the Pacific Islands region.

The Pacific Regional Coastal Fisheries Development Programme (COFISH) emphasises the importance of Coastal fisheries as the main source of cash and subsistence for many rural communities. Coral reef fisheries in particular are characterised both by their strong influence on the everyday lives of ordinary women and men, and by the lack of hard information necessary for governments and communities to make decisions about the management of reef fisheries. The Secretariat of the Pacific Community (SPC) has *inter alia* the region's mandate for fisheries research and stock monitoring, including both oceanic and coastal components. Findings are used to promote the economic and social development of the region.

The Development of Tuna Fisheries in the Pacific ACP Countries (DEVFISH) has the overall objective of this project is to increase the contribution from the sustainable use of marine resources to the poverty alleviation in Pacific ACPs. The project will contribute to this objective through a focus on the sustainable development of highly migratory oceanic living resources, particularly tuna fisheries. The purpose of the intervention is to contribute to the establishment of a concerted policy and economic environment conducive to the further development of Pacific ACPs owned fishing and processing operations and to an increased contribution of foreign fleets to the economic development of these countries. At present the economic contribution of the fisheries sector is poorly measured; the only performance measures available are catches or values of catches and fish trade data from existing national and regional reporting systems. These indicators are inadequate to measure the benefits received by P-ACPs at the level of the project objective and purpose. The project will build on the existing data, improve them with new indicators and regional workshops will be held to strengthen the capacity of national statistical administrations to improve measurement of benefits from tuna fisheries.

#### C.10.5 Risks

The main risk associated with the future of the EU FPA with Kiribati is related to the viability of the Agreement with respect to the limited catch by European vessels in I-Kiribati waters.. The indications are that these opportunities will remain under utilised until there is an increase in the real value of the catch making it more financially attractive to dedicate specific resources to effort in the WCPO. At a time when individual countries will start negotiating with Kiribati and other Pacific island nations for access under the VDS it may prove to be the

case that the potential offer by the EC is insufficient to gain the number of fishing days required in the medium to long term. Competition is particularly strong from Japan and Taiwan which provide substantial donor aid directly to Kiribati, covering both general development and fishery needs.

In the future, opportunities in the WCPO may be important in substituting for lowering of catch elsewhere.

## **SECTION D: CONCLUSIONS AND RECOMMENDATIONS**

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### **D.1 CONCLUSIONS**

The current protocol, which is the first between the EC and a Pacific Island Nation, has been in operation since September 2003.

While the FA has been effective in providing new fishing opportunities in the WCPO, which is especially important in the context of arrangements with other countries and the change to a VDS for management of purse seiner effort, the take up of licenses and an actual catch at below 10 % of the reference tonnage has meant that the real impact of the agreement has been limited in terms of value added, employment and supplies to the European market.

Neither has the FA been effective in enhancing supplies of fish to Kiribati, nor in stimulating the development of I-Kiribati on-shore fishing activity which was one of the aims of the I-Kiribati government. In reality, the development of any medium to large scale on-shore activity in Kiribati is extremely problematic, and unlikely to be feasible in the medium term.

In terms of the contribution to responsible fishing, the Agreement has ensured that fishing effort by EU vessels is in line with fishery management policy and related conservation measures current in the region. However, the fact that EC vessels have not fulfilled reporting requirements is of concern.

The Agreement provided significant catch opportunities which were not taken up by the EC fishing sector, with a maximum of three purse seiners taking about 600 t. per year and no effort by long liners although some licenses have been issued to individual vessels. The reason for this is that fishing in Kiribati waters does not fit with the current fishing patterns of the various EC boats; however it is clear that this situation could change in the future

Of the income provided to Kiribati, 85.0 % was provided by public funds, and the remainder from the vessel owners, in the form of licence dues and associated fees.

The funds available for targeted actions under the Agreement have not been efficiently used or paid, due to the lack of adequate planning and reporting by I-Kiribati.

In terms of relevance, the Agreement has satisfied the needs of EU vessel owners for access to fisheries resources of tuna and large pelagic fish.

From the point of view of Kiribati, the Agreement has contributed to the revenue stream from fishery licenses and introduced a new player into the allocation of fishing opportunities in the WCPO. This may prove useful in negotiating with other countries such as Taiwan and Korea. The funds have been directed at ensuring I-Kiribati presence at international meetings and to attend negotiations over fishery licenses. These tasks are vital to Kiribati especially where regional issues are one of the principal drivers of resource allocation and utilisation.

The contribution of the Agreement to the viability of the Community fisheries sector is moderate due to the low level of catch, contributing about 10 per cent to the harvest of Spanish purse seiners in the WCPO, the remainder being caught on the high seas. With respect to the surface long line vessels, the Agreement has not contributed to the viability of the EU fleet since no fishing has taken place. However, the FA does open a significant door to future catch opportunities in a major sea area where European fleets did not participate on an historic basis.

The Agreement has not contributed to the viability of the I-Kiribati fishery sector. There are no value added or other benefits generated except for the compensation and the licence fees. No I-Kiribati jobs are associated with the Agreement.

With regard to the Contribution of the Agreement to responsible fisheries, the relatively low catches, in terms of tuna and large pelagic resources, means that the Agreement has negligible impacts on these stocks.

Since there have been no EEZ activities relating to surface long liners, the Agreement has not impacted on the condition of yellowfin and big eye, about which there is some concerns. Similarly there have been no impacts on the mortality of sharks, dolphins, turtles and birds.

There is evidence of non-compliance with the Agreement's catch declaration requirements by EU purse seine vessels. The partner country has failed to enforce these provisions.

The Agreement has not supported targeted actions directed at fisheries research and fisheries MCS, which is largely covered by the assistance of Regional Organisations such as FFA and SPC. Despite the assistance to MCS, the capacity for implementation of an efficient programme of work in Kiribati remains limited.

In conclusion, although neither the Community nor Kiribati can be regarded as having gained the optimal benefits potentially available from the first protocol under the Agreement

The Agreement can be viewed however as a coherent measure for establishing mutually beneficial fishing activities within the Kiribati EEZ. It has been relevant to the prospects of a limited number of purse seiners, but the investment has not generated an economic advantage to the Community. In some senses, the FA has been relevant to the needs of the partner country in terms of generating revenue and forming competition to established interests in the regional tuna fishery. However, I-Kiribati perceived that the agreement would bring greater benefit in terms of on-shore development and they have been disappointed.

The Agreement is relevant and coherent with Community policies in relation to fisheries, and development, in both national and regional projects.

## **D.2 RECOMMENDATIONS**

### **D.2.1 Fishing Opportunities**

Renewal of the Agreement on the basis of the current fishing opportunities is problematic for the EC, given the negative return on its financial contribution. At the same time, FPAs have been negotiated with FSM and the Solomon Islands and there will be a need to maintain consistency. In addition, it will be important to establish a "claim" on the maximum number of vessel days possible to cater for a potential future shift of interest particularly for purse seiners currently fishing in the EPO.

It is also noted that, with the FSM and Solomon Island FPAs, the option for EU purse seiners to fish deeper into the WCPO. This would imply that in the normal course of events, more effort would be displaced to the Kiribati zone; moreover such effort would be likely to take place further west adjacent to the Gilberts group, where the purse seiners of other nations concentrate their work. Finally, with the introduction of the VDS, it may be important to establish a 'record' in the EEZs of individual countries. Accordingly, while the fishing opportunities should be retained at the current levels, the FPA should provide the option for a greater number of vessels. Consideration will need to be taken of the number of vessel days allowed by the agreement. In addition, a reasonably long validity period needs to be negotiated. This would reduce the risk of any on-shore investment that may be required to facilitate the operation of the boats, although there is no guarantee that such investment will take place, nor that there is potential for development in Kiribati as opposed to other Pacific Island States. This scheme comes in to force on December 1, 2007.

### **D.2.2 Other Areas for Consideration**

It is suggested that EC aid does not compete with that available under current arrangements, which would seem to adequately cater for I-Kiribati needs in terms of tuna fisheries management and MCS, although the required level of efficiency has not been reached. It is suggested that support be redirected, in part, to fit with project work and the established process of linking specific projects to donor aid. It is important to maintain support for attendance at regional and international meetings.

It is recommended further that the process of catch reporting is reviewed to ensure that the EC vessels comply with I-Kiribati needs. The specific requirements regarding the direct submission of catch declarations to the partner country should be strengthened, so as to ensure that stronger sanctions (other than temporary suspension of licence) are may be applied to offending vessels for non-compliance.

The need to either employ crew or make a payment in lieu should be confirmed. Problems that arise in the interpretation and implementation of the FPA would be better dealt with by a operating Joint Committee with a fixed schedule of meetings.

The conditions regarding observers and inspectors may be retained and strengthened to meet the need for an observer programme to be established.

Given the lack of an adequate infrastructure in Kiribati, and the probable limited nature of catches especially in the first two years, it is unlikely that EU vessels will trans-ship in Kiribati. This issue will need full discussion in the negotiations to consider alternatives acceptable to the parties.

### **D.2.3 Priority Partnership Areas**

Priority areas for the consideration within a new Agreement, employing FPA principles, are as follows:

- i. Continuing support for attendance at regional and international meetings.
- ii. Strengthening capacity to manage non-tuna fisheries, with development of appropriate management plans and matching research capability.
- iii. Contribution to the financing of specific projects, through a proportion of the financial compensation payable to the development fund.

Within the frame of the Agreement, the Commission may also consider providing technical assistance in relation to the strengthening of the fishery policy framework, and the design and programming of budgeted support measures within a mid-term expenditure framework for fisheries. The support programme should include a specific focus on strengthening the capacity for fisheries MCS within Kiribati's large EEZ and its role within regional organisations, such as WCPFC, FFA and SPC.

## Appendices

**Appendix A: Contact List**

<b>Surname</b>	<b>Forename</b>	<b>Position</b>	<b>Entity</b>
Auatabu	Tittema	Kiribati Country Intern	SOPAC
Bwenama	Tereere	Fisheries Office	FD
Gauche	Michel		European Delegation
Ho	Wendy	Administration	FFA
Hurst	Kyle	VMS Support Officer	FFA
Ieetaake	Teekoa	Permanent Secretary	Ministry of Commerce, Industry and Cooperatives
Kaieluelu	Timi	Chief Economist	MFED
Kokia	Bauteiti	Vice Principal	Fisheries School
Korele		Fisheries Officer	Observer Unit
Maamau	Taneti	PS & NAO	MFED
Namakin	Ian	Project Officer	Min. of Fish & Marine Res. Dev.
Onorio	Barerei	General Manager	CPP
Raimon	Matereta	Commissioner of Taxes	MFED
Reid	Chris	Economist	FFA
Riiwga	Tekirua	Observer Coordination	Min. of Fish & Marine Res. Dev.
Rimon	Betarim	Senior Project Officer	Min. of the Environment
Rodwell	Len	Senior Economist	FFA
Rouatu	Kevin	CEO	Atoll Seaweed
Ruaia	Kaburoro	Multilateral Treaties Manager	FFA
Teema	Tuake	Fisheries Assistant	FD
Temoia	Ioneba	VMS Officer	Min. of Fish & Marine Res. Dev.
Tiamere	Kaon	Fisheries Planning	Min. of Fish & Marine Res. Dev.
Tumoa	Raikaon	Senior Licensing Officer	Min. of Fish & Marine Res. Dev.
Yeeting	David	Permanent Secretary	Min. of Fish & Marine Res. Dev.
Yeeting	Norma	Executive/NAO	MFED
Kamatie	Maruia	Chief Fisheries Officer	Min. of Fish & Marine Res. Dev.

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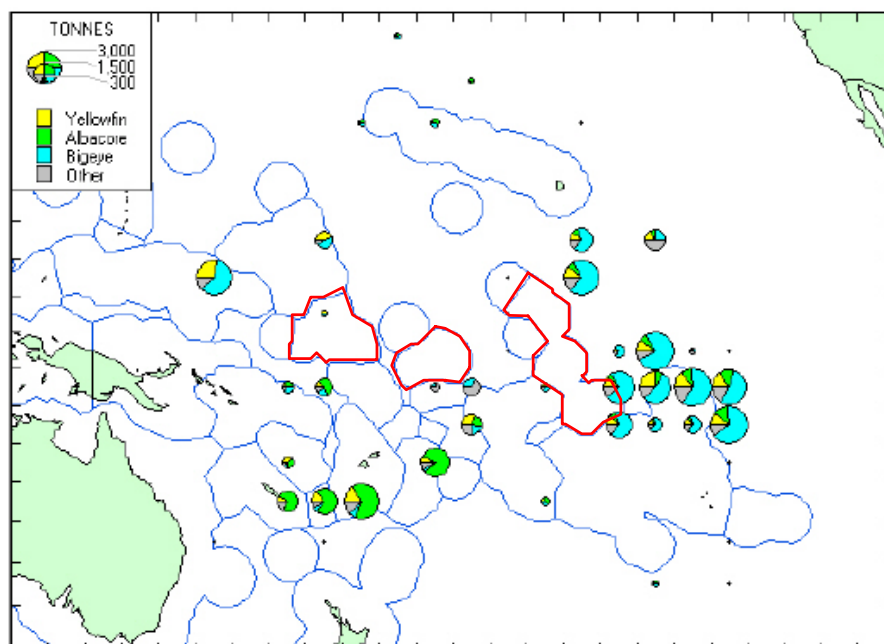
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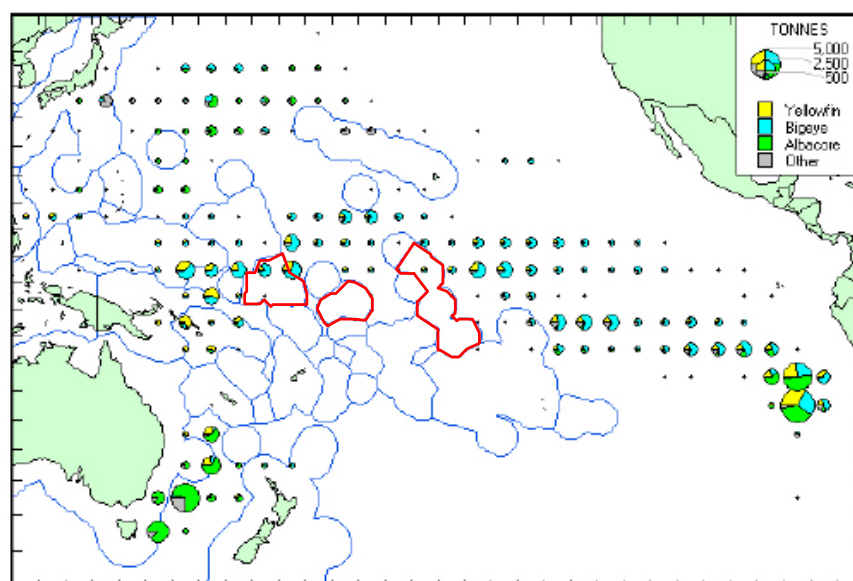
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### Appendix C: Distribution of Longline Catches in the Kiribati EEZs (by flag)

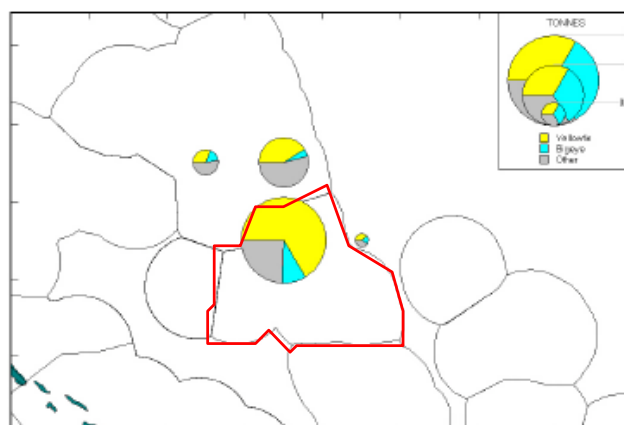
Chinese LL  
catch, 2003



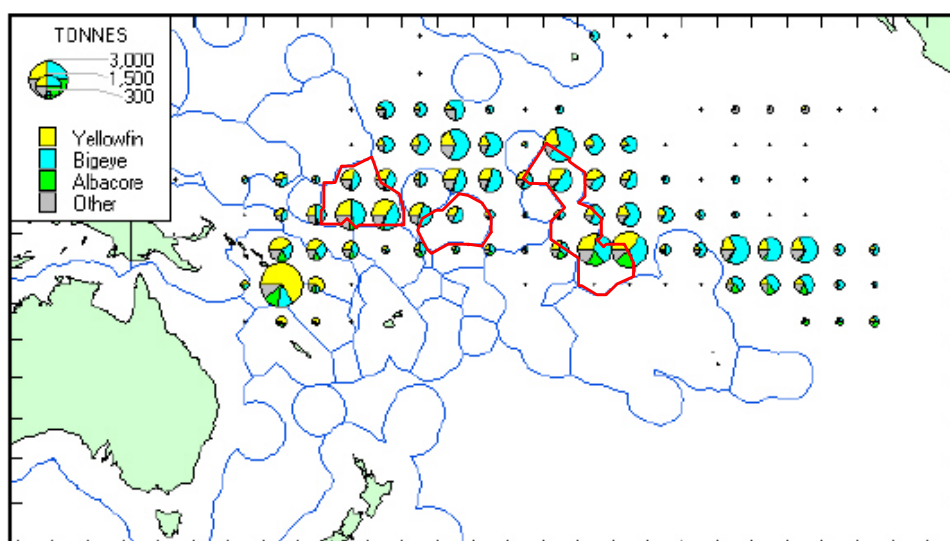
Japanese LL  
catch, 2004



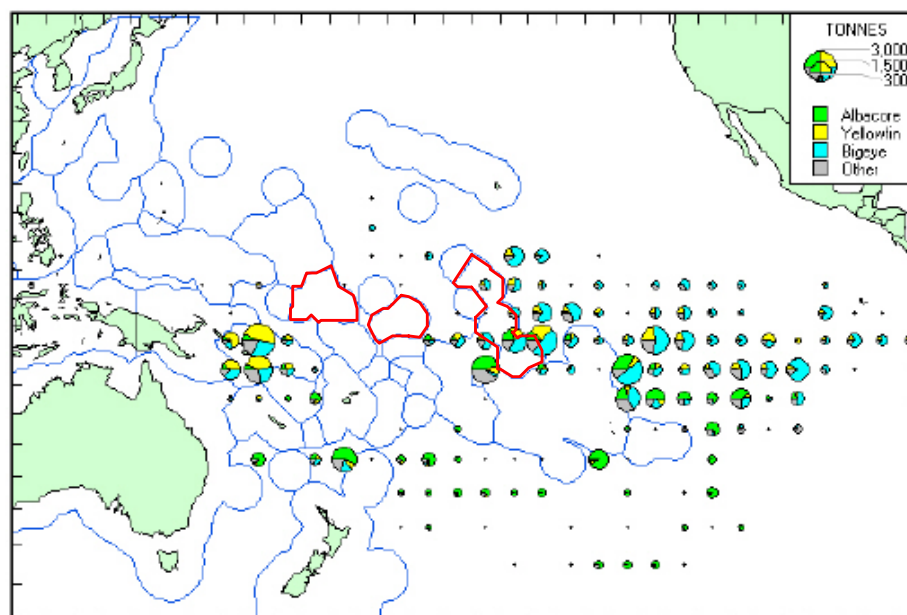
Kiribati LL  
catch,  
1995



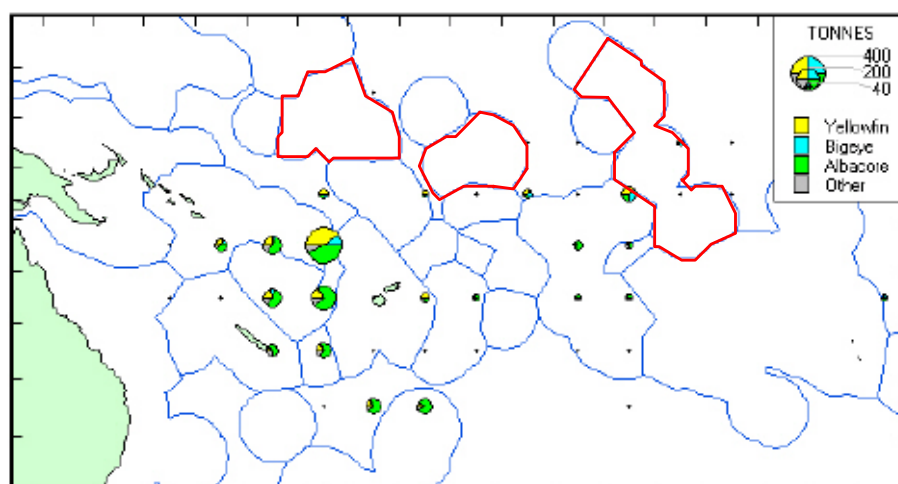
Korean LL  
catch,  
2003



Chinese Taipei  
LL catch,  
2003



Vanuatu LL  
catch,  
2004

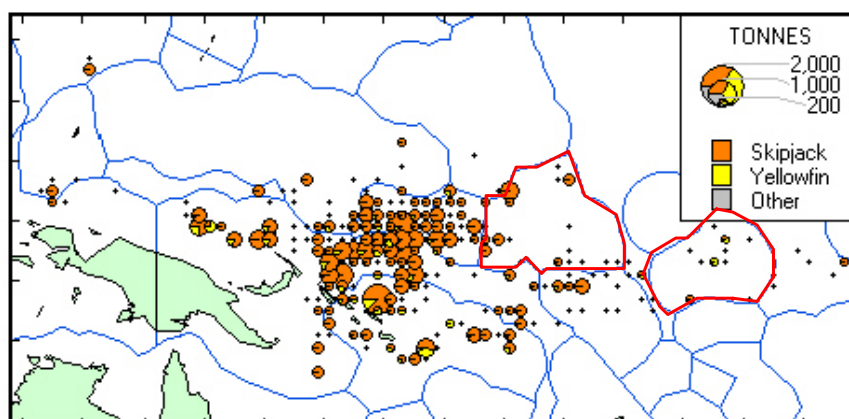
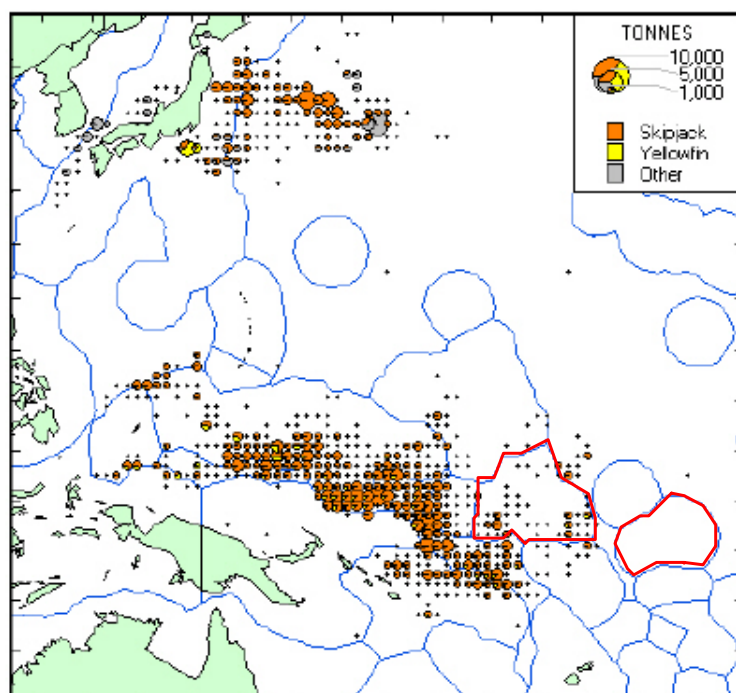
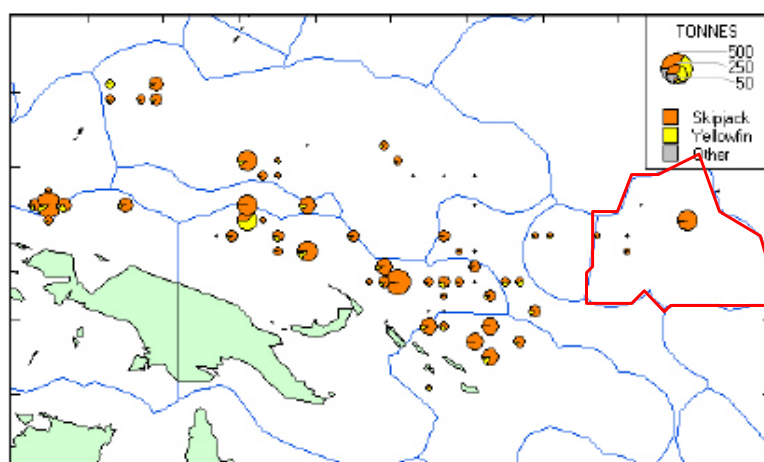


**Table 49: Longline Catches for the three Kiribati EEZ Island Groups (by species, flag and year)**

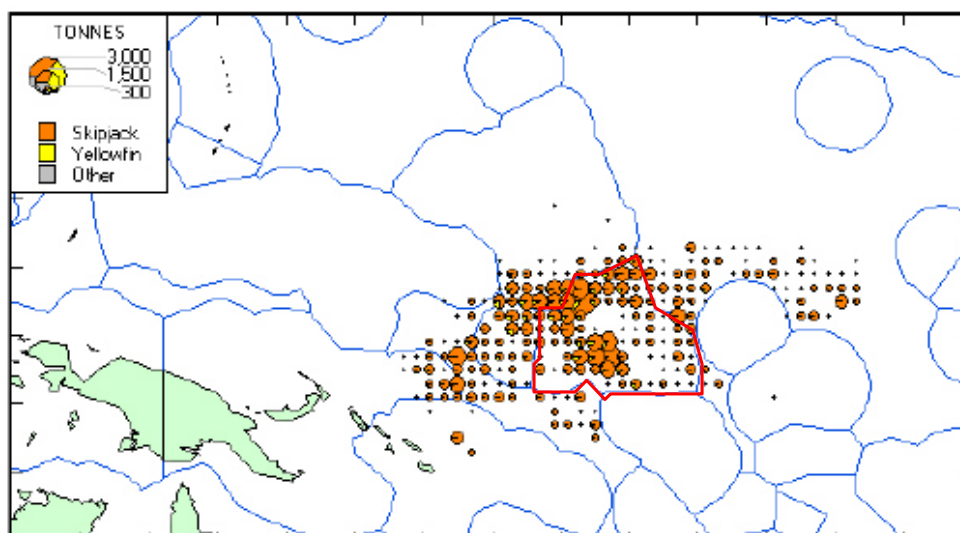
						Gilberts Total								Line Islands Total								Phoenix Total	Grand Total
		CN Total	JP Total	KR Total	TW Total		CN Total	JP Total	KR Total	PF Total	TO Total	TW Total	US Total	VU Total		AS Total	CN Total	JP Total	KR Total	TW Total	VU Total		
2000	Albacore		26	11	0	37	142	0	367	14		0	0		522		66	26	110	0		202	761
	Bigeye		624	430	11	1,065	16	69	11,695	6		177	5		11,969		4	139	1,193	10		1,346	14,380
	Skipjack		0	0	0	0	0	0	0	1		0	1		1		0	0	0	0		0	1
	Yellowfin		1,749	637	60	2,445	29	42	5,586	2		31	11		5,701		7	250	1,442	3		1,702	9,848
	Total		2,399	1,077	71	3,547	186	111	17,648	23		209	17		18,193		76	414	2,746	14		3,250	24,990
2001	Albacore		59	67	0	125	122	15	1,375	51		0	0		1,563		390		356	0		746	2,434
	Bigeye		2,125	2,439	147	4,712	2	23	8,669	22		15	29		8,761		0		1,042	13		1,055	14,527
	Skipjack		0	3	0	3	0	0	1	0		0	5		6		0		0	0		0	9
	Yellowfin		1,130	1,556	64	2,750	4	61	6,237	31		76	173		6,582		0		826	7		834	10,166
	Total		3,314	4,064	212	7,590	128	99	16,282	104		91	207		16,911		390		2,224	20		2,634	27,136
2002	Albacore		39	124	0	163		0	1,408	410		85	6		1,909			10	424	0		434	2,506
	Bigeye		1,799	3,823	32	5,655		240	11,727	69		2,363	44		14,443			24	3,110	385		3,519	23,616
	Skipjack		0	0	0	0		0	0	5		0	3		7			0	0	0		0	7
	Yellowfin		974	2,650	36	3,660		72	4,541	47		418	144		5,221			12	2,123	20		2,155	11,036
	Total		2,813	6,597	68	9,478		312	17,676	530		2,865	196		21,580			46	5,657	404		6,107	37,165
2003	Albacore		39	219		258	118		587	208	2	150		260	1,324	0	12	8	155	15		190	1,773
	Bigeye		293	4,065		4,358	63		6,209	29	0	1,146		0	7,447	0	99	42	1,629	573		2,343	14,147
	Skipjack		0	0		0	0		0	2	0	0		0	2	0	0	0	0	0		0	3
	Yellowfin		145	3,179		3,324	40		4,101	45	1	657		23	4,867	0	24	36	1,141	199		1,400	9,591
	Total		476	7,463		7,940	221		10,897	283	3	1,954		283	13,640	0	135	86	2,925	788		3,934	25,514
2004	Albacore	37	17	99	0	154	12	0	390	22		378		14	816	0	0	0	242	12	2	255	1,225
	Bigeye	18	438	1,938	68	2,461	547	197	7,571	4		9,812		0	18,131	1	188	22	3,516	1,013	0	4,741	25,334
	Skipjack	0	0	3	0	3	0	0	0	0		1		0	2	0	0	0	0	0	0	0	5
	Yellowfin	20	122	1,318	18	1,478	148	38	3,963	4		4,419		43	8,614	1	34	28	2,796	568	16	3,443	13,536
	Total	75	578	3,357	86	4,096	707	235	11,924	30		14,610		57	27,563	2	222	50	6,554	1,593	18	8,440	40,099

Source: T. Lawson (SPC), pers. comm..

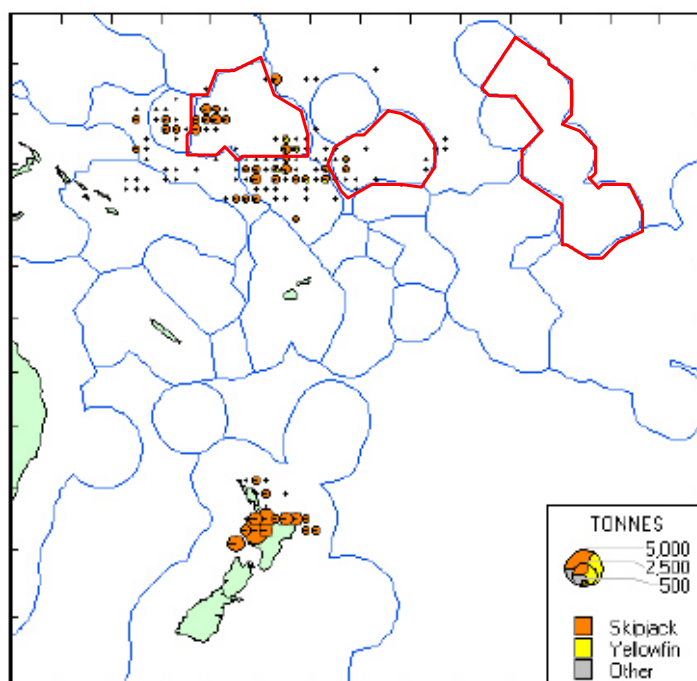
## Appendix D: Purse Seine Catches in the Kiribati EEZs (by flag)

FSM PS catch,  
2004Japanese PS  
catch,  
2004Kiribati PS  
catch,  
2004

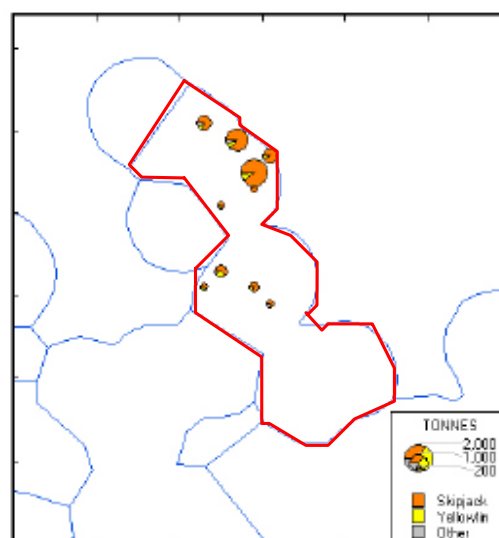
Marshall  
Islands PS  
catch, 2004



New Zealand  
PS catch, 2004



Spain PS catch,  
2004



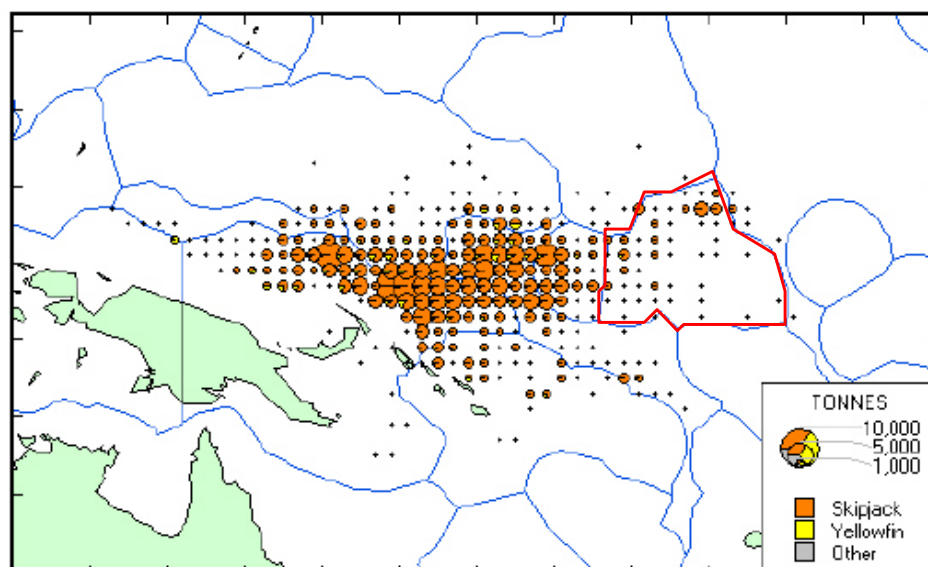
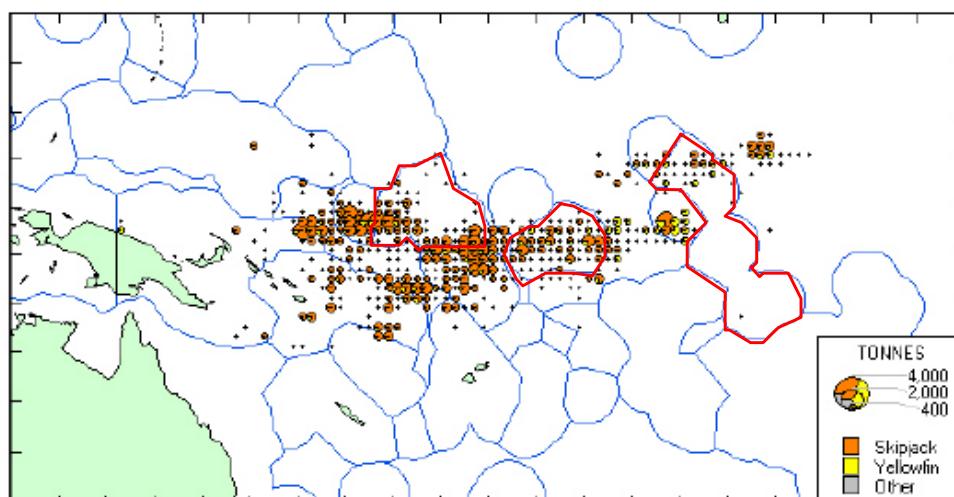
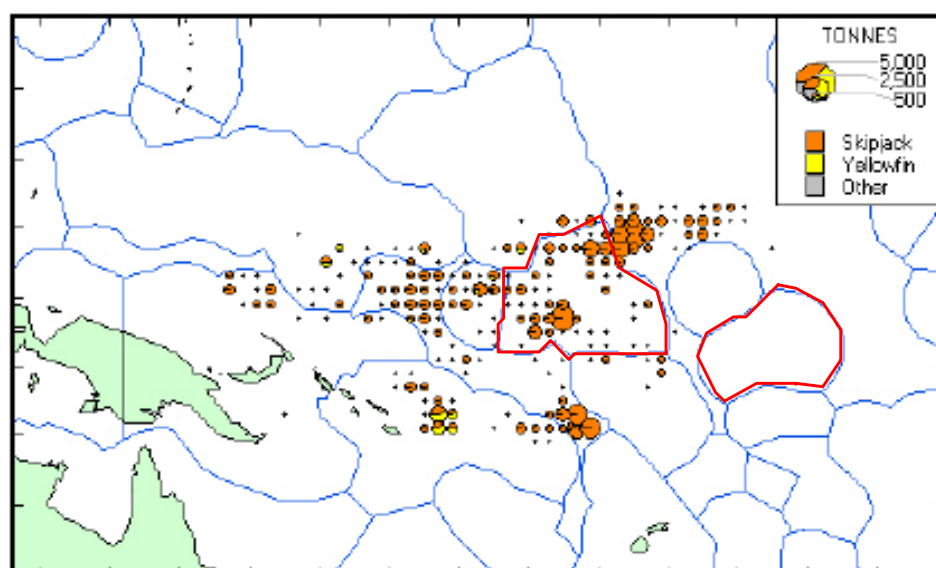
Chinese Taipei  
PS catch, 2004USA PS catch,  
2004Vanuatu PS  
catch, 2004

Table 50: Purse Seine Catches for the three Kiribati EEZ Island Groups

		Gilberts														Gilberts Total	Line Islands										Line Islands Total	Phoenix										Phoenix Total	Grand Total
		CN	FM	JP	KI	KR	MH	NZ	PG	PH	SB	TW	US	VU	CN		ES	FM	KR	NZ	PG	PH	TW	US	VU	ES		FM	JP	KR	MH	NZ	PG	SB	TW	US	VU		
2000	Albacore		0	0			0	0	0		0	0	0	0	0		0						0		0	0	0				0				0	0			
	Bigeye		24	28			87	12	25	34		34	114	1,583	28	1,970		379					264		643	33	10			23			3,485	3,551	6,163				
	Skipjack		804	22,643			15,099	3,657	880	1,700		1,293	14,004	10,171	16,597	86,848		906					651		1,557	96	258			753			12,956	13,963	102,368				
	Yellowfin		294	5,094			3,039	269	196	285		259	2,315	3,416	442	15,610		294					569		863	25	123			176			7,520	7,845	24,318				
	Total		1,122	27,765			18,226	3,938	1,102	2,019		1,587	16,433	15,170	17,067	104,427		1,579					1,484		3,063	155	391			952			23,862	25,359	132,850				
2001	Albacore		0	0		0	0	0	0	0	0	0	0	0	0	0							0		0	0	0	0	0	0	0	0	0	0	0				
	Bigeye		352	43	43	576	119	71	340	2	39	731	2,205	42	4,563		31						31		31		39	0	7	0	9	8	14	438	515	5,109			
	Skipjack		2,939	22,859	614	47,069	14,271	1,386	9,398	62	1,179	41,800	28,142	3,162	172,882		86						86		86		876	677	144	261	457	40	183	7,955	10,592	183,560			
	Yellowfin		2,231	7,624	235	13,839	1,228	488	1,854	8	136	14,673	8,619	1,283	52,218		121						121		121		247	0	166	0	60	29	275	1,714	2,492	54,830			
	Total		5,522	30,526	893	61,484	15,618	1,945	11,592	72	1,354	57,203	38,966	4,487	229,663		237						237		237		1,163	677	316	261	525	78	471	10,108	13,599	243,499			
2002	Albacore	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	Bigeye	11	67	96	10	184	88	10	106	37	9	307	352	37	1,313	4	44	76	486	68	531	60	386	1,965	104	3,724	5	0	6		20	25	0	284	0	339	5,376		
	Skipjack	3,062	1,522	41,936	707	42,050	21,545	1,248	11,268	1,155	20	68,366	8,854	7,333	209,065	31	111	1,988	26,532	2,665	4,362	39	7,341	4,781	35	47,885	326	564	8,343	2,615	909	2,524	19,655	403	35,338	292,288			
	Yellowfin	89	474	2,718	51	2,369	529	177	412	131	27	3,024	1,968	392	12,350	35	22	539	6,269	1,199	2,058	215	3,806	10,931	1,105	26,178	37	0	73	350	97	0	1,577	0	2,134	40,862			
	Total	3,162	2,063	44,750	768	44,603	22,162	1,435	11,786	1,323	55	71,696	11,163	7,762	222,728	70	177	2,603	33,286	3,932	6,951	314	11,533	17,677	1,244	77,787	368	564	8,422	2,985	1,031	2,524	21,515	403	37,811	338,326			
2003	Albacore		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	Bigeye		23	66	4	17	290	121	101			139	255	182	1,199											10				49		3	228		289	1,488			
	Skipjack		2,021	8,805	24	3,529	15,096	3,487	1,943			10,339	7,675	7,249	60,168								63		63		553			1,305		0	5,976		7,835	68,065			
	Yellowfin		182	2,902	30	413	1,071	594	700			1,511	1,145	1,238	9,785								0		0		78			239		29	1,024		1,370	11,155			
	Total		2,225	11,773	58	3,960	16,458	4,202	2,744			11,989	9,074	8,669	71,152								63		63		641			1,593		32	7,228		9,493	80,708			
2004	Albacore	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	Bigeye	0	25	87	4	2	463	163	75			26	543	21	1,409			842	42				362		1,246		36			0	104		589		729	3,383			
	Skipjack	629	1,357	5,349	252	456	18,977	2,982	13,140			11,436	7,137	11,650	73,366			3,479	115				814		4,408		115			42	588		4,885	5,631	83,405				
	Yellowfin	0	118	769	21	29	1,747	585	463			559	1,565	303	6,160			1,196	200				1,043		2,439		174			0	371		1,696		2,241	10,840			
	Total	629	1,499	6,206	277	488	21,187	3,731	13,678			12,020	9,245	11,975	80,935			5,517	356				2,220		8,093		325			42	1,064		7,170		8,600	97,628			

Source: T. Lawson (SPC), pers. comm.

**Appendix E: Log Frame Matrix for MFMRD Divisions: 2006****PROGRAMME:****Administration**

<b>Outputs</b>	<b>Performance Measures and Timelines</b>	<b>Assumptions and Risks</b>
KPA 5 1. Operational Plan	<ul style="list-style-type: none"> <li>Annual operation plan (appendix c) submitted by 30<sup>th</sup> Jan 2006</li> <li>Preparatory work to convene from June for next OP</li> <li>Quarterly Management to monitor Progress of OP</li> <li>Monitoring Performance Report (MPR) for 1<sup>st</sup> half of 2006 completed/submitted to NEPO by June 2006</li> <li>MPR for 2<sup>nd</sup> half 2005 submitted by end Dec</li> <li>Preparatory work to convene from June, 2006 for next OP</li> </ul>	Ministry is committed to operational planning process
2. Effectively run Registry	<ul style="list-style-type: none"> <li>Files appropriately labeled and stored and located within 2 minutes after request</li> <li>In coming mails to be circulated, allocated and acted within four days of receipt</li> <li>Check all PFs for confirmation and incremental dates from Mar to Jul</li> <li>Registration of closed files around Sept to Nov.</li> <li>Staff to be trained to use computer for efficiency</li> </ul>	Ministry has trained Registry clerks
3. Well maintained assets	<ul style="list-style-type: none"> <li>Equipment in good working order at all times</li> <li>Well maintained inventories for all office assets, equipments and tools and to ensure buildings dry, accessories and finishes clean and in good repair</li> <li>Maintenance survey begins by Jan at FD &amp; Feb at the HQ, prioritize &amp; secure funds until May, Maintenance work proceed by Jun</li> </ul>	Ministry employs staff with skills and knowledge to identify repair maintenance needs and could also contract work needed
4. Training & Recruitment plan for Ministry staff	<ul style="list-style-type: none"> <li>Establishment of HRD Committee in Feb</li> <li>Training Needs Analysis (TNA) begins from Mar, for all staff with a review of training plan and allocated budget completed by April and submitted to PSO by Jun to Jul</li> <li>Review of all staffing strength at all levels before budget and JD for all staff at all unit by Feb to Sept</li> <li>Temporary appointments reviewed every second months</li> <li>Vacancy clearance &amp; registration properly filled in Jan and Jun, interviews in Feb and Jul and PSC Submission by Mar to April and Aug to Sept.</li> </ul>	All trained staff return to serve the Ministry after graduation
5. Personnel emoluments are properly accounted for and verified	<ul style="list-style-type: none"> <li>All personnel emoluments verified and adjusted before the first day of every second week of the month</li> <li>PF updated from Mar to Jun to confirm incremental dates &amp; update nominal roll</li> <li>2005 KPF &amp; Tax Returns for FA Trainees processed in Feb</li> </ul>	The Ministry employ people on wage and salary basis. Wage earners are entitled to overtime etc. All staff are entitled to leave grant and increments in pay where due

Outputs	Performance Measures and Timelines	Assumptions and Risks
6. Cash received properly managed	<ul style="list-style-type: none"> <li>Cash receivables are deposited into the Government account at least two days after their receipt</li> <li>Yearly inspection of Revenue, Bus tickets, Eco Farm &amp; Aquaculture</li> </ul>	Ministry receives cash the purchase of fisheries posters and others
7. Reconciliation & acquittal of projects	<ul style="list-style-type: none"> <li>Reconciliation of 2005 ongoing projects by Jan, Fishing gear account: 04-05 by Feb to Apr, and O/S debts owed to suppliers by May to Aug</li> <li>Projects are acquitted as soon as the project completed</li> </ul>	Projects are required from the NEPO to be acquitted once they are completed
8. Project monitoring	<ul style="list-style-type: none"> <li>A monthly report on ongoing projects is submitted quarterly to the Senior Management meetings and a copy to the NEPO</li> <li>Visits to islands having a fisheries project in the Gilbert group and in Kiritimati island</li> </ul>	Monitoring enables the Ministry to keep track and progress of development projects
9. New project initiatives appraised and sent to NEPO for funding consideration	All new projects appraised and then sent forward either to source or NEPO 3 days after receipt	The REPU will carry out this task
KPA1 Pilot community or private pearl farms	Community and private run pilot pearl farms	Pearls quality depends on the seeding, especially the foreigner who does the seeding.
KPA5 Ministry budget prepared for 2007	Preparation & Formulation of budget begins in May and reviewed in Jun, finalized in Jul and submitted in Sept, before the commencement of the last parliamentary session for the year	Priorities can be applied where necessary
Financial reports on both recurrent and development spendings	<ul style="list-style-type: none"> <li>Monthly financial expenditure reports against budget available by end 2<sup>nd</sup> week of each month with comments about expenditure issues</li> <li>Reconciliation of 2005 Accounts i.e including payment warrants &amp; receipts, begins from Jan-May &amp; end of the Year overspending adjustment, tracing and updating of records</li> <li>Update &amp; report of KAO account by Feb-Apr</li> <li>Reconciliation of 2005 Output 03, by Jan and O/S debts owed to suppliers starting from Feb-Apr</li> <li>Reading, processing of salaries, payment and receipts entering, reconciliation, production of monthly account and inspection of ECO Farm</li> </ul>	Sustainability of PEBAM 2 System Sufficient skilled staff can operate and use PEBAM 2 System
Policy advice	Policy papers are well researched and constructed and available on due date Policy advice is available on request and based on factual information and data	Ministry is able to give open and accurate advice

**PROGRAMME:****Fisheries Division**

<b>Outputs</b>	<b>Performance Measures and Timelines</b>	<b>Assumptions and Risks</b>
Improved knowledge on Black-lip Pearl Oyster Culture	<ul style="list-style-type: none"> <li>Quarterly reports to be presented to the MFMRD Senior Management Meetings and Pearl Oyster Coordinating Committee (POCC)</li> <li>Transfer of technology on Pearl farming to Island Councils &amp; fishermen through workshop</li> <li>Pearl Jewellery workshop (AMAK) in Apr</li> <li>Survey of Outer Islands by Jun</li> </ul>	Black-lip Pearl oyster is the only type of oyster available so far in Kiribati and it produces black pearls currently fairly priced in the international markets.
Transition from pearl research to pearl commercialisation	<ul style="list-style-type: none"> <li>Identify appropriate model for pearl farm</li> <li>Identify market outlet</li> <li>Development of Commercialization Plan for Pearl Farming (Draft) by Jan-Feb</li> <li>At least run a training for Island Councils &amp; interested farmers on pearl farming by Feb-Mar</li> <li>Transfer of technology on pearl farming to Island Councils and fishermen through workshops</li> <li>Supply juvenile oysters to Island Council &amp; interested farmers on Abaiang(May), Abemama(July), Butaritari(Sept), Onotoa(Nov)</li> </ul>	Carrying capacity is not yet determined
KPA5 Coral Cultures established to target Ornamental Aquarium Trade	<ul style="list-style-type: none"> <li>Rehabilitation of coral &amp; monitoring by Feb, Apr, July, Nov</li> </ul>	Cultured coral is a new technology, which requires a simple laboratory. Getting this to the locals to farm may require training and time
KPA1 Private Enterprises encouraged and promoted to develop tuna processing and other marine based products	<ul style="list-style-type: none"> <li>Local fish processors trained fish processing techniques. Workshops will be carried out this year.</li> <li>Next phase development is being considered with CPP Tuna Processing Project.</li> </ul>	Private sector in Kiribati needs encouragement to venture to tuna or fish processing. Not many in Kiribati are heading this way.
KPA1 Extend grow-out trials of pearl oyster to other islands	At least 2 islands will have farms established by September	Other lagoons are assumed to be similar to the that of Abaiang Island
KPA1 Technology on building fibreglass & pump-boats	<ul style="list-style-type: none"> <li>Construction of fibre-glass boats for at least 4 outer islands by Mar-Aug</li> <li>Securing funds for pump-boats project</li> </ul>	Fiber-glass add safety to the lives of the fishermen together with fishing effort as it tends to increase the life span of the boat and offer more durability and agility in the water.
KPA5 Trial on post larval stage culture of potential marine species	<ul style="list-style-type: none"> <li>By Apr-Dec, Formulation of the post larval capture and culture fishery of aquarium fisheries</li> <li>Identify at least 3 potential species for development</li> <li>Initiatives of trial on post larval culture of potential marine species eg lobsters, shrimp, finfish (emperors, groupers) are the current target of Ambo Aquaculture to be commenced by Mar-May</li> </ul>	Capital input is required

Outputs	Performance Measures and Timelines	Assumptions and Risks
Commercialising Government owned fish ponds	<p>Introduce a new account system using PC software</p> <p>Business Plan of the farm completed by April</p> <p>Temaiku farm financial performance improve 10% than previous year</p> <p>Restructure plan of the farm organization by June</p> <p>Recruit new staff</p>	<p>Marketing and sales need to be improved</p> <p>Poaching needs to be controlled</p> <p>Irregular international flights limit exportation of farm products</p>
Transfer of relevant fishing method, and other post harvest and processing methods to rural fishers	<ul style="list-style-type: none"> <li>• At least organizing a fishermen training on FADs, transfer of fishing technology, fish handling &amp; safety at sea</li> <li>• Training conducted on islands in the Gilbert Group, Line and Phoenix Group.</li> </ul>	<p>Non availability of workshop participants.</p>
Facilitate and support seaweed farming on the outer-islands	<p>Successful farming units on at least 2 islands where seaweed farming is reintroduced.</p> <p>Production increase by at least 5% for the Gilbert Group</p> <ul style="list-style-type: none"> <li>• Exploring and researching other seaweed species that might have potential commercial values and existing markets overseas</li> </ul>	<p>Using the ASC as a vehicle to increase seaweed production, the Fisheries will try to push for price of seaweed through the Ministry and the board of Directors</p> <p>Government is required to subsidize the selling price increase of seaweed</p> <p>Changing environmental conditions</p> <p>Fish Grazing</p> <p>Predation</p> <p>Attitudes</p> <p>Competition</p>
Ensuring food security on the outer-islands	<ul style="list-style-type: none"> <li>• Fish is available in times of abnormal weather patterns</li> <li>• Identify funds for FADs project</li> <li>• Outboard training to fishermen on target islands</li> <li>• Rehabilitation of at least one Outer Island fish ponds</li> <li>• Supplying ice makers &amp; ice plants to outer island fish centers</li> </ul>	<p>Kiribati is prone to periods of drought and seasonal migrations of fish</p>
Facilitate processing and marketing of outer island catch.	<ul style="list-style-type: none"> <li>• Establishment of 4 fish centers on the southern Gilberts, i.e Beru, Onotoa, Tamana &amp; Arorae Island early this year</li> <li>• Establishment of at least 2 fish centers on the Northern Gilberts</li> </ul>	<p>Right size for processing facility is a crucial factor required to operate the center successfully</p> <p>Reefer carrier is available</p>
Facilitate trial collection of fresh fish from outer islands	<p>CPPL commissioned to provide the service</p> <p>An alternative shipping company is identified</p> <p>Supporting collection of fish from the outer-islands will carry out at least 2 runs from selected islands</p> <p>Encouraging local shipping companies to supply fish from nearby Fish centers as needed to CPPL</p>	<p>Vessels need to be well equipped to take on fish from the outer-islands</p>

Outputs	Performance Measures and Timelines	Assumptions and Risks
LEADING ROLE		
Facilitate joint venture operations in the harvest and processing of tuna resources	At least 2 interested foreign investors registering interest with the Ministry  Inclusion of JV initiatives in the agenda for access negotiations	CPPL is the likely local candidate for joint venture operations  Avenues for securing partners is during access negotiation talks
Facilitate private commercial investment in marine resources	Successful completion of the Kiritimati coastal fisheries center by early this year Work on the construction of the Kiritimati Coastal Fisheries Center is monitored monthly	Commercial investment in marine resources is limited. A fish center is required to stimulate investment from the private sector
Establishment of Marine Conservation Areas in vulnerable areas	<ul style="list-style-type: none"> <li>• Formation of Conservation &amp; management Task Force by Feb and conduct public awareness programs around Apr-Nov on 4 outer islands</li> <li>• At least establishing Locally Managed Protected Areas at Abaiang, Abemama, Onotoa &amp; Butaritari</li> <li>• Provide assistance to Island Councils in the formation of new by-laws</li> <li>• Conservation &amp; Management Monitoring by May-Dec</li> </ul>	Some areas are important for specific species such as breeding grounds which needs to be protected
Provide hatchery produced seeds to interested entrepreneurs for commercial and domestic trials	<ul style="list-style-type: none"> <li>• Construction of hatchery at Ambo Aquaculture by early this year</li> <li>• Disinfection of hatchery (plumbing) for the pearl project</li> <li>• Seeds produced distributed to at least 4 interested entrepreneurs, groups and the community at large</li> </ul>	Aquaculture is developing in Kiribati with interest already echoed from the community
Review Fisheries Act	Workshop conducted, March, 2005. Still awaiting for the full report from FAO Consultant who conducted the Workshop.	Fisheries act was first enacted in 1979. Some of the regulations contained in the act needs amending to account for changing practices and fisheries initiatives made in the region and the international stage
Facilitate the proliferation of Community-based Management through inputs and outputs controls. Plans for implementation by communities experiencing decline in certain fish species	4 visits to selected outer-islands to carry out consultations and workshops to conducts public awareness programs for the sustainable use of the resources on outer islands	Community based management is a popular and effective tool to allow communities participate in efforts directed at conserving a common resource
Periodic promotion of mariculture operations through media	Establishment of a fortnightly radio/TV program aimed at promoting public awareness of mari-culture activities/programs.	Mariculture is not new to Kiribati but there are areas which locals need more familiarity with to maximize benefits and the required outputs
Attend and participate in invitations to Regional meetings and international forums on Pelagic fisheries and help promote Kiribati interest both in developing offshore fishery as well as managing the fishery in these fora.	At least 5 Cabinet papers produced from these meetings	Meetings are important to get Kiribati views across
Solicit support from PNA member countries and FFA in our quest to maximise sustainable development of our marine resources	Attend at least 99% of all FFA meetings	Kiribati is a member to the FFC and the smaller PNA. The purpose of these memberships is to secure Kiribati position among the other major resource owners in the Pacific.

**PROGRAMME:****Fisheries Licensing and Enforcement Unit**

<b>Outputs</b>	<b>Performance Measures and Timeliness</b>	<b>Assumptions and Risks</b>
Submission of log catch data to SPC	Log sheets sent to SPC for further processing 1 day after it has been processed by the FLEU	Data is collected through logsheets and observer reports. The logsheets are filled by vessel masters while observer reports which also include some logsheet data come from observers which at present covers less than 3% of all vessels fishing in our waters
Professional information needed to conclude access negotiations	All information to the negotiations prepared a week before negotiations starts.	FLEU staff input data to computers which are maintained by an IT team also working in the FLEU
Surveillance of EEZ	6 trips made per year on Teanoai and at least one from the US or NZ coastguard	Teanoai is sometimes used by Government to transport officials to outer-islands. US and NZ coastguard operate on a ad-hoc basis
Maximize revenue from access fees	Fee level either maintained or increased per fishing vessel every license period.	Fishing in our EEZ depends largely on the occurrence of el-nino which is a periodic or seasonal occurrence in the Pacific
VMS register maintained	VMS data downloaded twice daily am/pm to locate vessels position in the Kiribati EEZ	Internet made connection to the FFA possible to download VMS
Registration and Licensing of Foreign fishing Vessels	Issuance of license permits to foreign fishing vessels two days after receiving application forms	All fishing vessels must have a license and registered before they can fish in the Kiribati EEZ
Observers coverage improved	Observer placement increased by 5 % from previous level. End of the year the target is 20% observer coverage of all vessels fishing in the Kiribati EEZ.	Observers are currently low in numbers compared to the number of fishing vessels

**PROGRAMME:****Mineral Unit**

<b>Outputs</b>	<b>Performance Measures and Timeliness</b>	<b>Assumptions and Risks</b>
Reconnaissance survey on Banaba carried out	A visit of Banaba before the end of the year is organized to carry out sampling to determine remaining phosphate	More work is still required on Banaba to determine the amount of un-mined phosphate reserves on the island
Development project for grid sampling on Banaba	Sampling was earmarked to commence in Sept-Oct, 2006	Grid sampling is one effective way to fully map an area and identify specific features associated with resource concentration
Potential investors identified by SOPAC and other donors to carry out mining feasibility studies	2 investors identified	The more investors the better however, investors will only come if the amount of un-mined phosphate is known
Procure equipment for aggregate company	Project anticipated to start in July after the disbursement of funds.	The Aggregate company is to be established this year.
Lagoon aggregates identified in North Tarawa, Abaiang, Abemama.	North Tarawa, Onotoa and Butaritari will be visited this year to carry out preliminary work Data for North Tarawa is being finalized by SOPAC.	Heavy beach mining along the shores especially on South Tarawa is causing serious coastal erosion.
Beach profiles monitored on selected islands.	The Line Group will be visited for data collection. A workshop will be carried out at the end of the year to train staff and NGO personnels on the data collection for beach monitoring. Establish a network of personnel to assist on outer island coastal data collection.	A data bank to store data of the foreshores is good way to monitor through time changes made to our shores e.g. areas which are eroded or those which have accumulated sand and aggregate deposits.
Annual coastal monitoring	<ul style="list-style-type: none"> <li>Coastal monitoring for Butaritari, by June</li> <li>Coastal monitoring for Abemama by early July</li> <li>Coastal monitoring for Onotoa by mid July</li> <li>Development of Coastal GIS completed by August.</li> </ul>	GIS is an important tool introduced recently to help map our non-living resources i.e. sand and aggregates.
Coastal management plan for Tarawa to take into account adaptation strategies is developed	Rectification of satellite and aerial photos for past years 1968, 1969 and 1945 should be complete and digitizing of the coastlines should be completed as well by the end of 2006.  Design of appropriate coastal awareness material and distribution to public.	Coastal management plan is an important tool to help manage the coastal areas.
Attend research cruises related to seabed mineral resources in the Kiribati EEZ.	Two cruises to participate with this year	
Establishment of a Marine Scientific Research committee to oversee non-living resource researches in Kiribati waters.	Committee formally established by May and meet monthly thereafter Development of appropriate guidelines in line with the Marine Declaration Act and the UNCLOS. Need to increase the involvement of national scientists in MSR researches.	The increase in marine research carried out in our waters need to be properly coordinated and verified that they are carried out for peaceful means.
Development of foreign interest in Line and Phoenix waters for mineral research	Submission made to foreign countries and secured interest of a researching state by end of the year	Line and Phoenix have mineral resource potential that needs revisiting as new developments and researches hypothesize that the area is rich in minerals.